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ABSTRACT

The detailed description and analysis of how "pace" and "flow" affect the quality of interaction in five filmed cross-cultural classroom situations amongst the Alaskan Yupik Eskimos provide illustrations of how the educational process can be helped or hindered by the manner in which students and teachers come together. The film analysis finds distinct differences between Anglo and Native patterns of pace and movement: the slow pace of the Alaskan Natives is accompanied by a soft and rounded style of movement, while Anglos exhibit a fast to moderate pace with linear, abrupt movements. The pace of each group appears to be independent of the other when together and mutual adjustments in pace between groups are few. The analysis suggests that the discrepancy between the Anglo teachers and Native destroy the communication process in the classrooms. Even minor accommodations destroy the communication process in the classrooms. Even minor accomodations on the part of the teachers serve to improve somewhat on the unfortunate pattern. The study confirms the importance of Native teachers for educational success in Alaska, with the critical factor being the nature of their training. Regardless of educational paraphernalia, curriculum content, or even teacher dedication, education cannot occur if there is poor communication in the classroom. (NEC)

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A FILM STUDY OF CLASSROOMS IN WESTERN ALASKA

Malcolm Collier

CENTER FOR CROSS-CULTURAL STUDIES

UNIVERSITY OF ALASKA • FAIRBANKS • 1979

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A FILM STUDY OF CLASSROOMS IN WESTERN ALASKA

Malcolm Collier

Center for Cross-Cultural Studies
University of Alaska
Fairbanks, Alaska 99701

June 1979

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THE ALASKAN CROSS-CULTURAL CASE STUDIES SERIES

Within the area of the earth's surface labeled "Alaska" there exists a unique mix of people whose cultural backgrounds and life styles range from subsistence hunters to industrial workers. All of these people interact in various ways to play out the drama of the everyday lives they lead, and for most, cross-cultural encounters are an inherent part of that interaction. The purpose of the Alaskan Cross-Cultural Case Studies Series is to make available materials that describe the nature of those cross-cultural encounters and contribute to an understanding of how they influence and are influenced by the social and institutional contexts in which they occur.

While the case studies in this series are derived from conditions and situations imbedded in the Alaskan context, their usefulness extends beyond Alaska and can contribute to increased cross-cultural understanding in other situations and contexts as well. The concentration and diversity of cultural interchange in Alaska serves to bring cross-cultural issues into bold relief, thus highlighting some of the significant factors that contribute to an understanding of those issues. With the understanding derived from an analysis of the Alaskan experience, we are in a better position to approach any cross-cultural situation in a way that reflects greater respect for the cultural integrity and diversity of the people for whom that situation is part of their everyday existence. Only with such respect and understanding can we expect to shape the social and cultural institutions that make up society in a way that all people can have equal opportunity for full participation in that society.

The case study format will provide the methodological basis for this series, because it provides a richness of information and a level of analysis that brings the various elements of a situation together and treats them as an integrated whole, rather than as independent parts. It is this examination of how the elements of different cultural systems interact when they come together that is so crucial to the development of cross-cultural understanding. Through the Alaskan Cross-Cultural Case Studies Series we will continue to identify, prepare, and make available materials that contribute to such understanding.

General Editor, Ray Barnhardt

Managing Editor, E. Dean Coon

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FOREWORD

A recurring theme in nearly all discussions of classrooms and teaching in cross-cultural situations is the need to attend to the non-verbal aspects of teacher-student interaction and communication. Malcolm Collier's use of film to study five classroom situations amongst the Yupik Eskimos in the lower Kuskokwim region of Southwestern Alaska has given us some important insights into the mechanisms by which non-verbal communication enters into the learning process in a cross-cultural classroom setting. Building on the work initially reported by his father, John Collier, Jr., in Alaska Eskimo Education: A Film Analysis of Cultural Confrontation in the Schools, Malcolm has elaborated on two particularly important dimensions to cross-cultural interaction, "pace" and "flow." The detailed descriptions of how these two factors affected the quality of interaction in the five situations analyzed in this study provide vivid illustrations of how the educational process can be helped or hindered by the way teachers and students come together in the classroom setting.

Anyone who has any role in shaping educational processes in Alaska will find that this study provokes some critical questions about how one goes about structuring the way we do schooling, and who the primary participants in that process should be. Must students and communities adapt to the pace and flow of interaction reflected in the school, or should the school adapt to the pace and flow of interaction in the community? Is it possible for teachers whose background has instilled in them a particular style of patterned interaction to modify their behavior in such a way that is compatible with a different style? What are the educational consequences of placing Native teachers in schools? Is it possible to change the structure of interaction without changing the structure of the setting in which it occurs? These and many other questions are derived from seriously thinking through the implications of this study for our schools. Until we begin attending to such questions we will continue to perpetuate an educational process that is highly inefficient and extremely limited in its potential for productive teaching and learning in cross-cultural contexts.

In addition to the light this study sheds on the way classrooms operate, it breaks some new ground with regard to the research tools and techniques available for studying the complex phenomena associated with cross-cultural interaction. The use of film as a research tool is a relatively recent development, but its potential for adding to our understanding of human behavior is well documented in Malcolm Collier's work. Anyone interested in using film or video as a data source for microanalytic research is encouraged to review the methodology section of this study for important guidance in the techniques employed in such research.

In addition to the study of Alaskan classrooms reported here, Malcolm Collier has worked with his father on a comparable film study of the Rough Rock School on the Navaho Reservation in Arizona, and he is currently working on several projects using film to analyze interaction in various bilingual/bicultural classroom situations in the San Francisco Bay area.

Ray Barnhardt
June 21, 1979

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PREFACE

This text was originally written as a master's thesis. Except for changes in the section on methodology, only minor revisions have been made. The purpose of this preface is to briefly discuss some considerations which may not be immediately evident in the text.

Most important is the fact that pace and flow are only two of the non-verbal factors which affect and reflect the course of communication in classrooms. Practical use of the ideas discussed in this writing should not be limited to consideration of these two factors alone. Non-verbal behavior includes such variables as the use of space, body posture and expression, eye behavior, facial expression, movement, style, etc. All of these must be considered in looking at what occurs in the classroom, with a constant sensitivity to the fact that all are shaped by cultural and situational variables.

Observers should also be aware of the ways in which the physical environment of schools and surroundings, the structure of curriculum, the content and character of lessons, can all shape or limit human behavior. The fact that these are often built-in factors does not make them any less culturally determined. The very concept of schools and classrooms with the bizarre habit of placing children in rooms for years on end is itself a product of the Western world.

We should also not forget that, while good communication may be a prerequisite for successful education, it does not in itself produce it. Schools remove children from their wider environment in which they would ordinarily learn a variety of things and restricts them to the contrived environment of the classroom. What do they gain from this process? The learning of the skills of writing, reading, and mathematics does not require all of the day, day after day, for twelve years. It does no good to have wonderful communication in this restricted environment if what is communicated is useless, negative, limiting or in other ways destructive to the children's personal and cultural potential. What is being communicated? This question should include both the implicit messages as well as the explicit content.

I make these comments because I think that in our explorations of the delicate and important issue of cross-cultural communication in education, it is easy to forget that there are other factors which affect the final outcome of education. In particular, I think we have become too complacent about the content of curriculum, assuming that it is relatively easy to create culturally and situationally relevant materials. I suggest that we all take a very hard look at this assumption and at the materials which are being used in the schools. Just what is the content, message, and quality of the materials which the teachers present to the children?

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I point out these other considerations to emphasize that education is a complex process with many variables. The practical importance of non-verbal factors is that they help to shape the circumstances in which education takes place. The value of increased awareness of non-verbal behavior and communication with their cultural variability is that these can provide an additional source of information or understanding concerning the educational process and the individuals involved in it. Sensitivity to non-verbal signals and patterns of behavior can often alert teachers to problems and successes long before these become apparent in more "conventional" forms such as verbal responses and school work. In particular, they can provide the teacher with important insight into those often forgotten children in the middle who do not cause trouble, are not obviously and verbally precocious, who do their school work consistently with neither great success nor great failure. Awareness of the cultural variability of non-verbal behavior should alert people to the need for careful observation and assessment in place of automatic and culturally conditioned reactions.

If there is one clear lesson to be learned from this study, it is the paramount importance of Native participation in and control of education in their communities. That participation has to be in a framework that allows for full use of Native cultural skills and patterns of communication. I have, in this writing, said some harsh things about Anglo teachers. These statements are not intended to question the teachers' dedication or potential contribution to the education of Native children. Where dedication and potential have not been properly used and developed, however, the teachers' skills and contributions are going to waste.

Perhaps the ideas presented in this book will help those involved with Alaskan Native education in their consideration of all these issues. I hope that they will be of particular use to those Native teachers and community members whose special skills and experience hold the key to the future.

Malcolm Collier
San Francisco
1979

PART ONE

INTRODUCTION

Scope and Purpose

Communication is the thread that makes culture possible. An understanding of communication and the behavior and circumstances which surround it is essential to understanding cultural processes. Through an analysis of selected Super 8 movie footage, this text explores certain aspects of non-verbal communication and attempts to more clearly define their nature and significance. The importance of non-verbal communication lies in the fact that it is a part of the process of human interaction to which we generally give little thought.

In the United States we tend to think of communication primarily as a verbal process in which meaning is derived from the content of the words used. As a result, we are fairly conscious of our use of words and our culture provides deliberate, if not always successful, training in the use of words. On the other hand, we think little of the non-verbal aspects of communication; practically no formal recognition is made of them. Consequently, we learn our non-verbal system informally and on a low level of awareness.

This low level of non-verbal awareness causes us little difficulty as long as we operate within the non-verbal system we have learned; when we step outside it, we are in trouble. Our emphasis on verbal content and on spoken language has led to intensive study of other verbal systems. We are sensitive to the potential for misunderstanding when we cross language lines. However, we are unprepared for the additional difficulties we may find in the non-verbal arena. These difficulties may occur even when, strictly speaking, there is no language difficulty. Our low awareness of non-verbal signals and behavior related to communication makes us ill-equipped to deal with differences of this sort. Indeed, we are often unaware that the differences exist. In these circumstances, communication can become a frustrating maze of misunderstandings of unknown origin. This study looks at some of these aspects of non-verbal behavior which may cause us difficulty.

In the descriptions and discussion that follow, two common words are used with particular meanings which need definition. The words are "pace" and "flow." They are used to name the aspects of non-verbal communication which are the central focus of this study.

Pace refers to the rate of movements, actions and events in communications and interactions. It is concerned with change over time. In the study of communication and culture, its importance lies in the fact that it varies from culture to culture and affects the meaning and course of communication, both directly and indirectly. People's use of

time is one aspect of pace, as is how fast people move. While pace is related to the quantity and quality of communication, the precise interrelationship will vary depending on the specific circumstances.

Flow is a more complex and qualitative aspect of non-verbal communication. It refers to the interrelatedness of the movements of people who are interacting or attempting to interact. The development of synchronization of movements by participants in an interaction creates a sensation of a flowing current of motion without discontinuity. High flow would then refer to situations in which the movements of the people interacting are interrelated and not occurring at random without relationship to each other's movements. Low flow would be the reverse.

The possible significance of these aspects of non-verbal behavior in the communication process is a major subject of this study. In general, I believe that their primary purpose lies in facilitating the process and defining the nature of a given interaction among people. They both reflect and affect all other aspects of the process as well, supporting it and on occasion, as will be described, destroying it. In particular, study of flow may be a significant source of qualitative statements about the nature of communications and interactions.

A Brief Discussion of Related Work

In the field of non-verbal aspects of communication and culture, previous work has touched somewhat on these aspects of human interactions. Of particular relevance to this study is the work of Edward T. Hall. In working on the problem of training American governmental and business personnel for jobs in other cultural settings, he found a differing conception of time, its significance and its organization, to be one of the critical sources of difficulties in cross-cultural circumstances. Social processes, such as business transactions or meetings, had regular patterns with regard to time allocated to waiting, preliminaries, immediate business and so on. These patterns were distinctly different in different cultural settings and misunderstandings often resulted when people of differing patterns attempted to interact with each other. In some cases, the meaning of communications could be totally altered by differences in the timing of social processes that were part of the context of interactions (Hall, 1967).

Similarly, he found distinct cultural patterns in the use of space, particularly in social interactions. In studying the way people use space (which Hall called "proxemics") he found that, as in the case of the use of time, alterations in space relationships among people could often alter the nature of interactions and the meaning derived from those interactions by the participants. As with the organization of time, these patterns of space usage were culturally specific. Conflict and misunderstanding in cross-cultural interactions resulting from differing uses of space were quite common (Hall, 1967, 1969).

While these finding are quite interesting in themselves, they are important to this study because they have led Hall to look at what people did relative to each other as they organized the timing of

activities and their use of space in interactions. As before, he found distinct, culturally specific patterns in the way that people moved. These movements tended to be coordinated among people who were involved in some kind of social interaction with each other. Film taken by Hall at a fiesta in New Mexico showed mixed crowds of Indians, Anglos, and Spanish Americans, each group with its own characteristic pacing of movements and smooth interrelationships of movements within groups. The Anglos moved briskly, with linear movements directed ahead and well spaced from each other. A group of Pueblo Indians, probably a family, moved down the street in a more compact mass. Their softer and more rounded movements were synchronized through the group, not directed ahead but all around. Two girls talked to each other while they moved around a post. Their movements were so carefully timed and synchronized that when the sequence was projected in slow motion, their actions gave the appearance of a dance (Hall, 1968, private communication and viewing).

Hall's work stimulated the film study on which this study draws and also led to further related work by Hall. In a recent publication, he suggested that the meaning of communication or interaction is produced by an interrelationship of information and context. The relative significance of either information or context in determining meaning is a culturally defined pattern that varied from culture to culture. Non-verbal systems tended to be highly contextual in nature. Symbolic systems such as spoken language, and even more so written language, tended to be highly informational and low in context. Some cultures heavily emphasized context while others stressed information. When people with these different emphases tried to communicate with each other, they often experienced great difficulty (Hall, 1974: 18-20). In effect, this suggested that some cultures placed more emphasis on non-verbal aspects of interactions than others. Hall suggested that modern Western cultures, particularly the academic subcultures, tended to be low in context and high in information in their orientation (Hall, 1974: 18). This model of context, information, and meaning is used in a somewhat altered form in this study.

While Hall's work is the most closely related to the concerns of this study, there have been others whose works have touched on related phenomena. While studying their photographs during the production of their work on Balinese character, Margaret Mead and Gregory Bateson noted that movements of participants in various activities involved complementary movements, mirrored movements, and parallel movements (Bateson and Mead, 1942). Similarly, in a study of small group conferences that Mead made together with Paul Byers, a distinct interrelationship of movements among interacting people was evident in the still photographs on which the study was based (Mead and Byers, 1968: 70-105). In a film study of a kindergarten class, Byers later discovered dramatic differences in the pace of Black children compared to Caucasian children as well as to the Caucasian teacher. Significantly, these differences clearly made communication between the Caucasian teacher and the Black children very difficult. Neither was able to adjust their pace to the other. Their motions were oppositional and out of sync. Frustration on the part of teacher and child was evident in the footage. On the other hand, although the White children had somewhat different pace and movement patterns from the teacher, they both modified their movements

when they got together so that motions became interrelated and smooth, with no obvious frustration (Byers, private film viewing and communication).

In discussing types of non-verbal behavior related to the communication process, Ray L. Birdwhistell mentions what he calls "interactional behavior," referring to the movements of whole bodies or parts of bodies among participants in an interaction. In addition to briefly discussing the work of Hall, Mead, and Bateson already mentioned, Birdwhistell reports a private communication from William Condon with regard to "synchrony and dissynchrony" in interactions. This refers to a very close coordination of movements of people who are conversing. Birdwhistell suggests that it may supply a measure of "interactional communicative signals," by which I assume he means the general quality of communication (Birdwhistell, 1970: 232-233). In his own studies of kinesics, Birdwhistell emphasizes the important function of context in the total meaning of communication and includes in his discussion of communication the idea that it is a continuous process that takes place on several levels or channels. These are the olfactory channel, the auditory channel, the kinesthetic-visual channel, and the tactile channel. In an interaction, one or more of the channels is always in operation, and communication in general can only be understood by examining all the channels (Birdwhistell, 2970: 69-71).

The phenomena of interrelated movements on the part of people in social interactions has shown up in several ethnographic films, including a very interesting sequence in a portion of film made by John Marshall in the Kalahari Desert. In this particular case, the film shows two men conversing with each other. The listener's motions are closely timed and coordinated with the speaker's. When one man stops talking, the person who was listening precisely mirrors the last portion of movements made by the first speaker while the listener begins to speak (John Marshall, 1971).

All the anthropologists and film makers mentioned have peripherally touched on certain aspects of what I call pace and flow; they have developed viewpoints on communication which are used in this study. None focused directly on these phenomena which remain "crudely understood" (Birdwhistell, 1970: 232). In any case, pace and flow were chosen as focal points for this study because my own experience in visual research has shown them to perhaps be the key to understanding communications and interactions as fluid processes. At the same time, they remain difficult and elusive concepts which are particularly difficult to communicate to people unfamiliar with the film or with the circumstances to which the concepts were applied. It seemed time to try to define the significance of pace and flow and to develop some procedures for obtaining information about them. I know that any discussion of such non-verbal phenomena would be impossible without specific case examples and descriptions. For this reason, a large portion of this study is devoted to a specific case study which provides a context for more general discussion.

The Data and Procedure Used in Analysis

The film used for analysis was made by John Collier, Jr., as part of a study of Native American education in Alaska in 1969. However, the more general statements of this study are based on both the analysis of that film and also on a variety of additional sources. The primary sources of this study include my own experience in cross-cultural situations and work with film and video tape studies of cross-cultural education. In addition to present and earlier analytic work with the Alaskan footage, the experience includes video taping and analysis for a teacher training program at a Navajo-run community school in Arizona, a yet-to-be-finished film study of a bilingual program in San Francisco, and film which I have made of several ESL (English as a Second Language) and elementary classes in the Bay Area.

These involvements resulted from and led to discussions with other people in the same general field of interest. These interchanges, particularly with Edward T. Hall and, of course, with my father, John Collier, Jr., have been an important source of information and ideas. Whenever possible, I have attempted to provide appropriate published references; however, since most of these contacts have been informal conversations, this has not always been possible.

Discussion of non-verbal phenomena in a verbal format is at best difficult. Without specific examples, reference points or shared experience, discussion becomes almost impossible. This fact is one of the reasons for devoting a portion of this study to the analysis and discussion of a specific body of film. I hope that the analysis of the Alaska footage will serve as a reference point for my more general discussion. In addition, the analysis of the Alaska footage serves several other purposes. It represents the first time I have tried to research a body of film specifically in terms of pace and flow. The film provides an opportunity to discover the kinds of information that can result from such an approach. Finally, the film and the analysis provide illustrations and examples with which to communicate more precisely what pace and flow are and what their significance may be in human interactions.

The Alaska film footage was chosen for a variety of reasons. I was already familiar with it from previous work. I knew it had usable material for exploration of the pace and flow concepts. Since the film had already been studied for other reasons and with different concerns, I had supplementary material to draw on which might serve to qualify findings I made. However, the main reason for using the Alaska footage was that it was available. Some of my own film and video material, which was shot with a growing awareness of pace, flow and related matters may well have been richer and more readable; however, the circumstances under which they were shot made their usage, for the time being, impossible.

As mentioned previously, the film used for analysis is part of a larger body of film shot in 1969 by John Collier, Jr., in Alaska. The film was made in support of the National Study of American Indian Education for the U.S. Office of Education. The hope was that the film study

would provide insight and information that the more standardized methods of evaluation could not. The bulk of the film was shot in the Kuskokwim River region of West Central Alaska, covering two isolated villages, a Christian mission,and a regional center of some 2,000 people. Additional film was shot in the schools of Anchorage and in an Indian fishing village in southern Alaska, although this last footage was not used in the report to Washington. The major portion of the footage is of classrooms,with supplementary coverage of village and family scenes. Audio tapes were made in the classrooms but the films themselves are silent. The total film file amounted to some twenty hours of film. I did not analyze all the footage for this study, but instead selected portions of it. The manner in which I made these selections is described shortly.

The original film was shot with the goal of obtaining a sample of grade levels, school situations and communities. In the villages, this meant that the whole school was filmed. In the regional center of Bethel and in Anchorage, only a sample of classes from kindergarten through high school was filmed with selection dependent largely on the willingness of the teachers to be filmed. The goal was to "chart the human and educational behavior of Eskimo children on three curves: an ecological-geographic curve, a cultural-ethnic distribution curve and an age cycle curve" (Collier, 1973: 50). The village schools were 100 percent Native. The regional center had a small percentage of non-Native students. The city of Anchorage had an overwhelmingly non-Native student population, with the Native students accounting for less than eight per cent of the school enrollment. With three exceptions, all teachers in the film sample were Anglo, although two Eskimo aides and an Eskimo mother were filmed working in the classrooms (Collier, 1973).

I started my analysis of the film with the advantage that I had taken part in the earlier analysis of the footage which led to a report to the U.S. Office of Education and to the publication referred to above. However, the earlier work was involved with somewhat different issues than the present analysis. The question at that time was,"What can these films tell us about the education provided Native children in Alaska"? Pace and flow received only passing attention. These concepts were only shadows in the background. The present analysis also includes material from film footage of home and village studies which were not used to any large degree in the earlier work.

I decided to concentrate on a core portion of the footage rather than attempt analysis of the full twenty hours of film. Several considerations were involved: time, wide variation in the readability of the footage in terms of pace and flow, and above all, a belief that concentration on portions of the footage that were interrelated would produce qualitatively better results. The rest of the footage would always be there if it were needed.

The main criteria used in selecting a core of film for analysis were that the footage be interrelated in terms of content and locale and that it contain a high proportion of material believed to be readable. Since I wanted to include material from non-school settings, I decided to use all the footage from the villages and several rolls of film from the regional center. This core footage included film of twelve class-

rooms, three church services, four family studies, daily life at the Moravian Mission Home, an advisory school board meeting and assorted footage of scenes around the villages and the regional center. The total running time of this footage was approximately 5 1/2 hours.

I had at my disposal audio tapes made in conjunction with the filming in Alaska. The primary use of these was to define the content of curriculum in the classroom situation. This analysis is concerned with what can be seen, and I did not attempt to analyze the audio records nor to examine, to any significant degree, the relationship of verbal behavior to the non-verbal behavior seen in the films. Neither would have been possible with the available data. There remains the question of the relationship of verbalizations to non-verbal behavior--a relationship about which very little is known. In this study, I operated on the assumption that, generally, people's non-verbal behavior both reflects and affects verbal behavior as well as other aspects of the interaction. These interrelationships are discussed in somewhat more detail in the main body of the text.

It might be mentioned in this context that photographic records in general and movie film in particular are qualitatively and quantitatively different from other forms of data. The amount of information to be found in even a very short segment of film is immense, and its quality, though subject to the way it was gathered, is often very good (Collier, private communication).

The analysis fell into several stages: early survey and searching, detailed viewing and description, selection of significant sections for illustration, and an attempt at an over-all conclusion, both descriptive and theoretical. The basic procedure in this analysis was to look at the film again and again. The main difference between one stage of analysis and another was in the focus of the observation process and the manner of recording these observations. The first stage involved survey and logging. It was a process of becoming acquainted with the footage in terms of pace and flow without attempting detail or depth. Each reel of film was viewed from the beginning to the end without stopping, while a rough log of it was made. This log was concerned primarily with two things: (1) the rough content of the film organized by minutes, and (2) the rough notation of pace and flow patterns with focus on identifying the sections of footage which might be profitably examined in more detail and depth. This information was reduced to both sides of a sheet of typing paper, generally one sheet for each reel. Several classes and reels had two sheets because of significant content changes which occurred within the reel.

The information was used to plan more detailed viewing of the footage. A small portion was set aside as containing little usable data and the remaining footage was reexamined. This detailed reexamination was focused around questions which an overview of the survey results suggested. These questions were:

1. Does the pace of the Native children and adults vary in school compared with outside of school?

2. Is pace coordinated group-wide in all situations?

3. What are the flow characteristics of interactions in the various situations in the footage?

4. What produced the sensation of group disunity reported in the survey for most of the classrooms?

5. What produced the sensation of group unity reported by the survey in the non-school situations and in a minority of school situations?

6. In general, are patterns of pace, flow and related usage of space in home and village scenes different from those in school situations?

7. What visible factors provide the answers to these questions?

8. Do the answers to these questions help explain the general characteristics of education found in the course of this and earlier analysis of this footage?

The film was projected onto a rear projection screen, stopped, reversed, viewed repeatedly and sometimes in slow motion, as required to understand what was occurring in terms of these questions. I typed out detailed descriptions of each reel as I watched the film. Descriptions contained both simple descriptions such as "the teacher hands out papers" and more qualitative descriptions or observations such as "the pace of the classroom is more coordinated than the last one." Simple descriptions come directly from the film and require no special explanation. I tried to tie the more qualitative observations and descriptions to concrete evidence from the film by asking and trying to answer the question, "What told me that?"

Following this stage of the analysis, I went through the films and made still photographs of those scenes and sequences which the detailed viewing had indicated to be significant. Using these photographs, the survey sheets, and the detailed observations and descriptions of the last stage of analysis, I was able to make general and specific statements about pace, flow and related aspects of the circumstances recorded in the films. I returned to the film record as necessary to refine these statements and used the still photographs to help illustrate and communicate the patterns seen in the study.

PART TWO

ANALYSIS OF THE FILM

Analysis of film is a search for patterns and contrasts. This section of the text describes the patterns and contrasts in pace and flow that emerge from studying the film record of homes, villages and schools in a section of western Alaska. This description and discussion is in two parts: first, a detailed description of a number of pieces of footage representing the range of patterns found in the study; and, second, a more generalized discussion of patterns, contrasts and their significance. This general discussion draws on the whole five and one-half hours of film that were analyzed, not solely on the examples presented in detail.

The purpose of first presenting a detailed description of a number of cases from the film sample is to provide the reader with a more complete frame of reference within which to place the more general discussion. I also hope that these detailed descriptions will, more than any abstract definition, help to convey what I mean by pace and flow as well as show how these concepts were used in analysis of the film record.

The first case is one in which pace was widely shared and flow is high. The next three involve situations in which flow was low. The fifth case described in detail is one in which high flow developed quite possibly from the manner in which the teacher structured processes and relationships. The names of teachers here and throughout the study are the same code names used in Alaskan Eskimo Education. The descriptions are presented with photographs taken from the film record to help the reader see what is described and discussed. Many of these photographs are sequences which should be looked at with care in order to see the flow of movement as well as is possible in still photographs.

A Head Start Class in Kwethluk

The Head Start class was held in the Kwethluk community center with minimal equipment. It was taught by two young women from the village, Miss Annie and Miss Betty, whose training was limited to six weeks in a summer workshop. The number of students fluctuated during the filming but generally numbered eight to twelve (Collier, 1973: 75-78).

The film opens with Miss Annie and nine of the students seated on boxes in a rough circle reciting Mother Goose nursery rhymes. The teacher and the students are seated on the same level, so close together that everyone is touching his neighbor. The circle is tight enough that the teacher can easily reach across it. Miss Annie projects directly out toward the students with movements that are slow and rounded,

meaning that the direction of movements is circular rather than linear. The pace of her movements and their form is identical with those of the students. Her movements and theirs are keyed to each other, giving an impression that the group is wired together. At one point the rhyme is "Twinkle, Twinkle, Little Star." The teacher and students open and close their hands to mark the time of the rhyme and the twinkling of the star. The timing of these movements is synchronized between teacher and children and within the group. The students close their eyes as they close their hands and open them as they open their hands; when the eyes open, they are focused on the teacher. Attention is intense at all times (Illus. 1-5).

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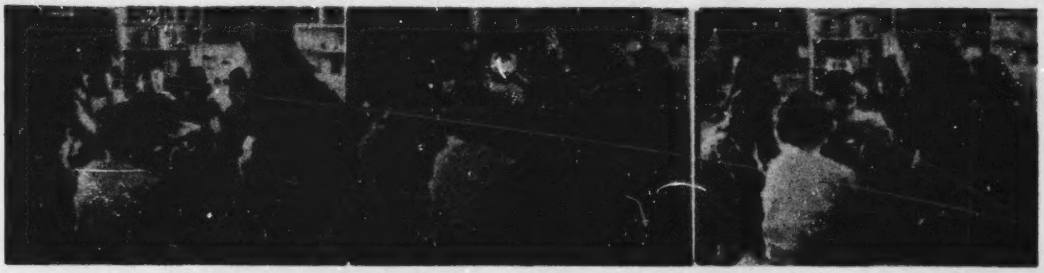
This initial portion of film already defines the nature of the class. A unity of involvement and movement is seen that indicates harmonious pace and flow, giving a strong indication that the level of communication in this class is quite high.

The unity of the group is slightly broken by the rough-housing of two boys. The teacher quickly deals with this situation in a smooth and relaxed manner. The process provides a clear example of what flow is all about. Without rising, she reaches forward toward one of the boys, who in turn leans toward her and grasps her wrist. She guides him smoothly toward another place in the circle. The movement of the two is fluid and unified; their movements perfectly synchronized as if in a dance. The rest of the group is part of the "dance," too. As the boy

leans forward and brings his head down to meet the teacher's hand, the heads and torsos of the other children also lean forward and down. As he comes up and moves across the circle with the teacher, the heads and bodies of the other children also come up and follow the movement toward its completion (Illus. 6-14).



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These fluid interrelationships are the epitomy of a high level of flow. The smoothness of the interactions are more striking because they are disciplinary movements. The reader might remember the flowing unity of this interaction and compare it to other scenes which will be described later. Smooth, relaxed interrelationships like this one suggest a high potential for quality communication.

After the nursery rhymes are over, the group sits together for a while. Several of the students rearrange their seating somewhat. Miss Annie reaches toward one of the children. He appears to be the youngest and has been somewhat peripheral to the group. She draws him in toward her, stroking his head as he leans against her. Then she sits and serenely looks out over the group. There is no hurry to do anything. After a time she reaches over to the bookcase behind her and draws out a book which she shows to the student closest to her. The smaller boy just mentioned reaches across to touch her hand. She turns smoothly around toward him and shows him the book directly. She then leans out with the book to show it to the remainder of the students. The small boy leans around the book to look at it again (Illus. 15-17).

15 16 17

Then Miss Annie sits with the book on her knee and looks out over the group. The small boy leans against her again. As they sit like this without apparent organized activity, one of the boys starts to beat rhythmically with his hands. Several others pick up this motion and join in. Another student follows the movement and rhythm with a bobbing of the head. A dance of synchronized movement develops which is another example of the harmonious unity of this group (Illus. 18-20).

18 19 20

The next portion of the film shows the students at a table, involved with jigsaw puzzles. Although the table is quite long, everyone sits close together at one end, shoulder to shoulder. The pace is leisurely

and the teachers sit among the children. Since their pace and movements are the same as the children's, the only thing that visually separates them from the children is size.

The film then shows a story session. Ten students and the two teachers sit in a rough ring as Miss Betty, seated on a low chair, reads from a book. The children and Miss Annie are seated on boxes.

The group has a steady pulse of movement while they listen. After a time, the teacher raises her hands from the book and gestures with both hands and head, projecting out toward the group. The pulsing movement of the circle of children (a gentle rocking back and forth together) is combined with a unified focus on the teacher's hands and face. When she drops her hands a bit and looks down, they all shift their eye focus downward. When she raises her hands to gesture, they all lean back together with their heads and eyes rising to follow the gesture. As the hand comes down again, there is a smooth rocking forward and dropping of center of eye focus which follows her gesture back down to the book.

The camera angle shifts around behind the group and the pulsation of motion becomes more distinct. In and out from the center of the circle the students rock, like a jelly fish opening and closing its umbrella. This movement is almost completely synchronized through the group. The teacher is no longer gesturing, but the circle has drawn in tighter when the camera returns to view the group from the front. The focus becomes more intense. Bodies lean forward with just a slight back and forth rocking at the same pace as before (Illus. 21-13). The story ends.

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Miss Betty returns with another book and the camera moves to the other side of the circle. There is again the same slow pulsation of the group, including both teachers. Attention is so focused on the story that two boys who rearrange their boxes for a better view do so in time to the group-wide pulsation. The camera shows the faces all focused toward the teacher with intense involvement (Illus. 24-25).

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This unity of movement is important because it reflects the unity of attention, evidenced also in facial orientation, which Miss Betty was able to create, and the high degree of interpersonal awareness among the children. There was an invisible thread which ran through the group, a current of awareness that was not broken by anything in the presentation. She had only to interest one or two children and their interest would be transmitted through the group so that soon the whole group would be interested. It was easy for both Miss Betty and Miss Annie to hook into the current or thread which held the group together because the pace and style of their movements were similar to those of the children. In doing so, they became a part of it, feeding energy into it and receiving back from it. Many other teachers in the film sample, some of whom will be described shortly, cut across the current and prevented the development of fluid interactions among the children and between the children and the teachers.

The next scene shows most of the children coloring. As in the puzzle portion of the class, the children are all close together at one end of a long table with their papers touching or almost touching. The coloring is freehand and very animated. The children are lively; they show excitement in their faces and interact with each other a great deal while coloring. They all share a large box of crayons.

Miss Betty is seated at the table. Several of the children who are not coloring are elsewhere in the room playing various games. One of the children apparently has a sore throat and both teachers examine him. Miss Annie brings the sick boy to the coloring table and slowly shows him the crayons, and draws lines on the paper, apparently to show him the colors. The process is quiet and unpressured. The teacher leaves him and talks briefly to another student (Illus. 26-28).

26 27 28

After a while there are more children on the floor, playing with puzzles, blocks and running around. The teachers join in these activities, one of them constructing a tower of blocks with several students. She quietly draws one boy into the process, handing him a block and showing him where to place it, then afterwards adjusting it to fit in a little better. The whole interaction is non-verbal as well as can be determined from the film (Illus. 29-31).

29 30 31

The film then shows Miss Betty reading to a small group of children. As she reads she holds her hands together, wiggling them back and forth. The student next to her mimics these gestures. She then touches her nose and the same boy touches his nose. A boy in front of the teacher looks at the camera and then back at the teacher, picks up the gesture and touches <u>his</u> nose (Illus. 32-37).

The film ends with everyone washing up for a lunch of soup, cheese, milk and pilot crackers. They sit at a long table, say grace ,then eat.

32 33 34

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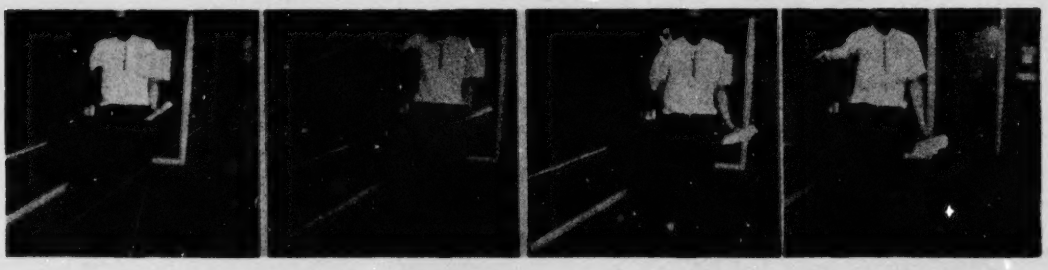
These last sections of the class continue the patterns of the earlier portions. Communications between teachers and children are frequent, often intense and smooth.

One observer of this footage has remarked that the class reflected the philosophy of early childhood education and that the performance of Miss Betty and Miss Annie could in large part be related to their six-week training session (Connelly, private communication). The film clearly shows the influence of general early childhood education patterns in terms of content and, to a degree, in format. It is what happens within that format, and with that standard content, that is remarkable. The most important aspect of this class, aside from the smooth teacher-student interactions, was the sense of unity of direction and movement in the group. This unity, lacking in other classes, gave the class an unmatched intensity of interactions. It is unlikely that these characteristics resulted from anything learned in the training session. In any case, the nature of interactions within the Head Start class closely resembled the nature of interactions seen in footage of home and village scenes. This fact strongly suggests that the special aspects of the Head Start class reflect the transference of local Eskimo patterns of behavior into the setting of a Head Start class.

A Combined Prefirst/Second Grade in Kwethluk

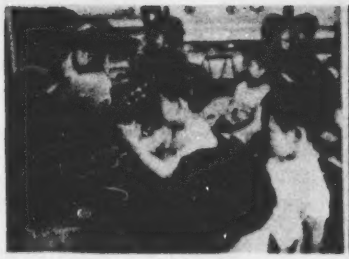
Kwethluk is a large village with a new and, ideally, well staffed school. As is common in village schools, the principal was expected to teach as well as administer. In the normal course of events for the region the staff had been depleted by illness and resignations. Accompanying readjustments in classes and duties of the remaining staff had to be made. The mix of second grade and prefirst described here was a result of these adjustments. It was taught by Mr. Principal, a credentialed teacher in his first year of teaching in Kwethluk. In his role as principal he was under particular stress because of staff shortages. The combined class was not exceptionally large, with twenty-six students in a large room. Mr. Principal had the assistance (not always utilized) of a local teacher aide (Collier, 1973, private communication).

The film starts with most of the students seated in three rough rows of chairs in front of the room for an ESL (English as a Second Language) lesson. A small number of students, under the supervision of the aide, are working with workbooks at desks in the back of the room. Mr. Principal has an ESL dialogue, concerning a lost child and a policeman, written on the board. The language of the dialogue, written for Puerto Rican children in New York City, is somewhat awkward. Mr. Principal reads the dialogue, explains it, and then has the group repeat it. His movements and gestures are fast, angular and harsh, meaning that they are linear in direction and carried out at high speed which is marked by abrupt stops and starts (Illus. 38-40b).



38 39 40a 40b

A comparison of his pace to that of the two Eskimo women who taught the Head Start class indicates that he moves three times as fast as they did. Student response throughout this ESL lesson is marked by a lack of flow and uncoordinated pace. There is a great deal of fidgeting, twisting, and turning. These movements are generally uncoordinated actions of individual students. One boy claps his hands, puts them on his knees, raises his hands again and claps them in a rhythmic movement. But this whole sequence of action is totally ignored by the surrounding children (Illus. 41-46).



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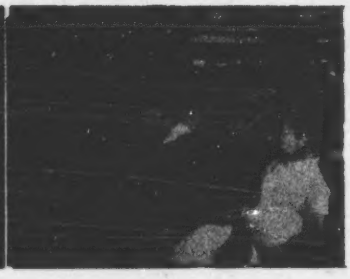

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At various times the group as a whole is oriented toward the teacher, but these moments are brief and soon replaced by less unified behavior, including a fair amount of looking at the camera (Illus. 47-48).

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It is this inconsistency of group-wide orientation and coordination of movements which leads me to describe this session as having a discordant note and little flow.

As the lesson progresses the teacher selects individual children to come forward and act out the dialogue. An older boy plays the part of policeman. Several students come forward one after another to play the part of a lost child. These sequences present an opportunity to observe teacher-to-student interactions with two different students, a boy and a girl. The teacher smoothly ushers the small boy to the front of the room and positions him facing "Mr. Policeman." In this sequence the teacher slows his pace and he and the boy move together (Illus. 49-51).

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However, as the teacher moves back the boy takes a frozen stance just as the teacher left him: feet together, elbows in, hands held tightly in front and motionless. After a period of waiting, the teacher moves in to encourage him. But now Mr. Principal has returned to his quick angular style of movement. He gestures vigorously, points to the board, leans over the small boy. The boy remains frozen in position. The boy is replaced with a girl. She, too, takes the same frozen position and holds it (Illus. 52-55).

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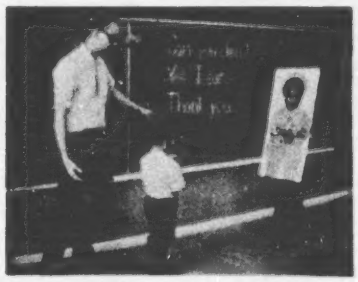

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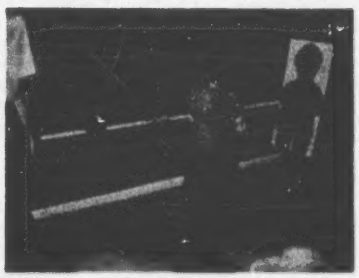

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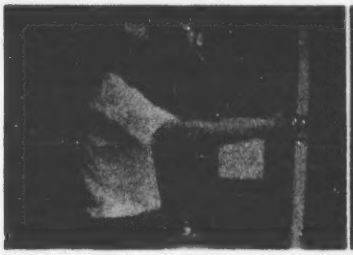
The remainder of the class continues in its chaotic state with pace and movements utterly uncoordinated. They are a group of isolated individuals, all moving in the same manner and at a similar pace, but not together. The teacher was able briefly to adjust pace and actions to mesh with the students. He was, however, unable to sustain these adjustments once the process of the dialogue was started and so could not help the students relax to a point where they could comfortably act out the dialogue. The frozen state of the students when they were singled out to perform in front of the group was repeated in several other classes with other teachers. The lack of flow in their movements in front of the class conveyed their extreme discomfort. Throughout the ESL lesson, Mr. Principal's fast pace, and abrupt, angular movements appear to have made it quite difficult for the students to be drawn into the lesson as he presented it. The uncoordinated behavior of the children reflected the degree to which they were uninvolved with the lesson, as well as to the degree to which Mr. Principal's actions and manner disrupted group unity.

After a brief period of reorganization, the ESL lesson is followed by a session of Mother Goose rhymes. Pictures of characters in the rhymes are projected on a screen while the teacher leads the group in chanting the words together. He starts out at a more moderate pace than in the ESL lesson; but, after a time, he returns to the hectic pace and gestures that typified the earlier session (Illus. 56-58).



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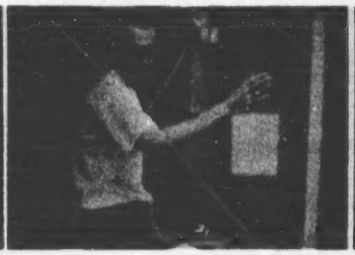

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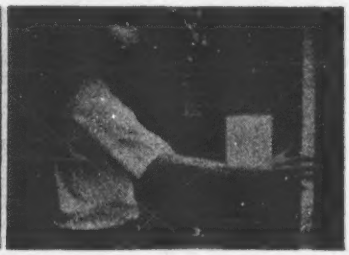

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This period of group activity saw the most unified behavior on the part of the students and the longest periods of attention for the group as a whole. Behavior was less chaotic, and the increased consistency of attention was revealed by more unified body positions and facial orientation toward the teacher. There was some synchronization of pace within segments of the group, if not group-wide. An example of this was a period of time in which two students rocked back and forth together (Illus. 59-62).

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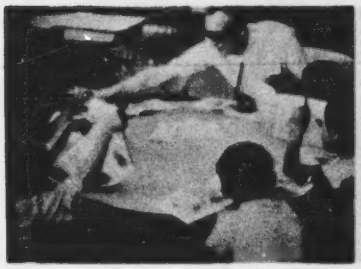
It may be that the pace or rhythm of the rhymes momentarily provided Mr. Principal with a pacing more congenial to that of the children, thus drawing them in. This beat was not picked up by other children, however, and unity of attention seen in the orientation of faces was soon replaced by twisting and turning, and by wandering glances. Mr. Principal was able to get their attention and involvement for a period of time but was unable to hold it. The situation suggests, as in the ESL lesson, that the pace and style of his presentation were too distinctly different from that of the children for any flow to develop. Consequently, he was unable to provide real direction to the class.

The next sequence of scenes shows the class scattered around the room: the younger children coloring dittos of Mother Goose rhymes, some of the older children working at a table with worksheets, and the teacher and seven students gathered around a table for reading. Despite the small size of the reading group and their proximity to each other, there is no sense of group unity, no thread which holds them together. They move, as so often in this class, at the same pace but not at the same time. While bodies turn, eyes wander all over the place. Each student moves alone without relationship of a consistent nature to neighboring movements. Some of them place their books on edge, making walls behind which they sit isolated, slumped down in their chairs. This isolation is indicative of the lack of communication among the children and with

the teacher. The teacher sits hunched over at one end of the table (the table is too low for him) and vigorously pursues the lesson in the same abrupt, forceful and linear style which he used when he was projecting to the whole class in the ESL lesson. He reaches across the table several times to turn students' pages or to draw attention to the books. These movements are sudden and at variance with the students. In one case, he accidentally hits a boy on the side of the face. Neither he nor the boy were sufficiently aware of the other to avoid the blow even though they were sitting side by side (Illus. 63-65).



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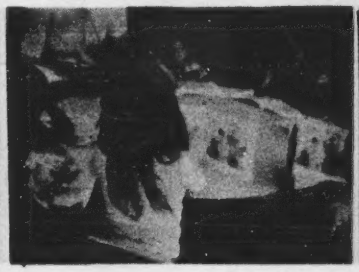

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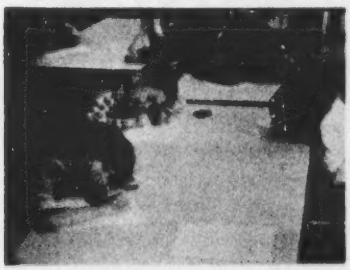
All these movements would have been intrusive and disruptive to student flow and involvement with the lesson if there had been any; but with things as they were, these motions were merely a part of a generally confused pattern of movement and interaction.

The camera swings to show the rest of the room. The aide, helping a girl with some writing, leans over and writes something. Student and aide move at the same slow pace, but the camera continues its swing and the scene is lost to view before any characterization of the interaction can be made. The younger students sit widely scattered, coloring, just filling in the lines. Each is alone with his or her sheet of paper and an individual set of crayons. The coloring process is slow and sleepy. Eyes wander readily to other parts of the room (Illus. 66-67).



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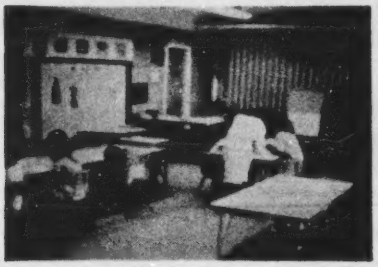
The camera swings and shows the aide with three students. All are bent intently over the table, focusing down together. One of the girls gets up from her seat and stands leaning on the table to get closer to the center of focus (Illus. 68-69).



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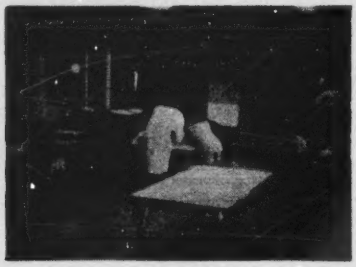

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The camera returns to the teacher, now standing, who continues in the same energetic style. The students at the reading table continue the behavior already described.

The next portion of film shows a play period. Most of the students play alone or in groups of two or three. Behavior is generally similar to the play in the Head Start class. The only striking difference is that here there is a fair amount of bumping into one another, and the scene is correspondingly a bit more chaotic. This disorder may in part be due to the smaller size of the play area and the larger number of children.

Throughout this play period the aide continues to work with two of the three students she was last seen helping. They sit in the middle of the room in quiet concentration, heads and bodies focused down on the table or toward each other. They have created an invisible bubble of intense concentration in which they continue their work smoothly and without hurry (Illus. 70-72).

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The class ends with the whole class gathered at the front of the room as images are projected on a screen and students are called forward to point things out. The behavior is generally the same as during the ESL lesson, except for an interruption when everyone but the teacher turns to look out the window. Presumably, something of importance and interest, a plane landing perhaps, is outside (Illus. 73).

73

The teacher ignores this intrusion and resolutely continues in his hard-working manner, pointing to things, gesturing and drawing students to the front of the room to point out things on the screen. As before, they stand in frozen postures and escape as quickly as possible back to their chairs.

This class was typified by a nearly complete absence of connection between the pace and movements of the teacher and the pace and movements of the students. The teacher operated at three times the speed of the students, and in a style of movement--angular, linear, and harsh--which was opposite in style from the rounded movements of the students. Except for brief moments noted in describing the ESL lesson, the teacher appeared oblivious to the position, pace and movements of the students. Had he attempted to relate to them more closely, the conflict in pace and motion would have been even more striking. The students' chaotic behavior may have been partially a result of a non-verbal chasm between them and the teacher which made it nearly impossible for the teacher to create a situation in which the class could focus in on the material which he was presenting. Mr. Principal worked almost nonstop in his efforts to involve the students, yet the class was characterized by boredom and general lack of intensity of involvement with anything. Only the two or three students described working with the aide showed any extended involvement or intensity. Could Mr. Princiapl have modified his behavior, the structure of the class, or the role of the aide in such a way that student interest and involvement would have matched his own hard work and obvious dedication? It is ironic that Mr. Principal's hard work and dedication, expressed as it was in increased pace and more aggressive movements, may actually have served to make the situation worse. Even such a small matter as a marked reduction in the speed of his movements might have led to improved student response.

A Kindergarten Class in Bethel

This class was taught by Miss Kinderbelle, an older woman who had a long career in Alaska schools (Collier, 1973: 87; Connelly, private communication). The film opens with the class, seated in two long rows, facing one side of the room where an Eskimo youth is playing an electric guitar. Seven boys are seated together in front of a long table, and eight girls are seated behind the table. There is an eighth boy in the class, but he is separated from the rest of the class and does not seem to participate. The class is all Eskimo except for one boy who was reported to be part Eskimo (Collier, private communication). The teacher sits to the right of the table. As the film coverage begins, a boy is "dancing" in front of the class while the teacher and (ideally) the children clap time. The teacher's movements are aggressive as she claps, but the children are lackadaisical and totally out of sequence. The boy in front of the class has almost the exact position that the small boy in Mr. Principal's ESL lesson had in front of that particular class. The boy extends his hands in front of himself, and his body is rigid. He lifts his feet perhaps half-an-inch and too slowly to carry out the dancer's role (Illus. 74).

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After a time, he is replaced by another boy who is somewhat more active; but not, as it develops, in the style preferred by the teacher. She rises abruptly (it takes her one second to get from her seat to the boy eight feet away), grabs the boy by the upper arms, and moves him around into various positions which she thinks are correct for the dance motions. These involve turning one way, then another, and moving around the floor in the process. Both this boy and the previous one had remained in one spot. The whole process, from the time she rises from her seat until she is seated again, covers no more than eight seconds; her movements throughout are quick and forceful. The boy's response to this sudden manipulation is passive; he is moved by her and does not move with her. At all points in the movements he is lagging behind her movements, and his body is subtly out of balance (Illus. 75-79).

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After the teacher returns to her seat, he continues his dance somewhat in the manner she demonstrated but in very awkward form. When he finishes he is rewarded by a piece of candy (as each dancer was) and quickly sits down. The sequence is a clear illustration of lack of flow between teacher and student.

Performances in front of the class continue, first by two girls and then by two boys. In both cases the behavior is the same; they stand in one place and move their feet up and down an inch or two while holding rigid body positions. As with the children in prefirst, they appear to be quite uncomfortable and embarrassed; they hold their hands close to their sides except for occasional covering of the face and some nervous movements to the mouth. Throughout this time the rest of the class dutifully claps in perfect dissynchrony while their attention wanders all over. They look at the camera a great deal. In my experience, this often indicates distraction and lack of interest in the classroom activity of the moment (Illus. 80-82).

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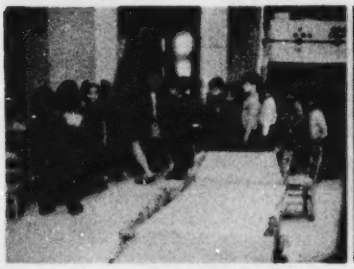
This session of the class ends with the group dancing around the table. The students, while more active and relaxed in their movements, are as discordant as a group as were the individuals. In preparation for recess the teacher lines the students up in two lines adjacent to the door and turns away to get her coat from the closet. Her back is turned less than five seconds, and in that interval two of the girls start a spontaneous dance. They hold hands and dance around in a circle, bouncing up and down, with fluidity and enthusiasm which contrasts totally from the attempted dancing at the direction of the teacher. There was no flow in the movements and interactions of the earlier dancing but now there is; movements are well synchronized and smooth (Illus. 83-88).



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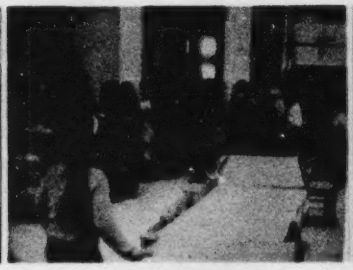

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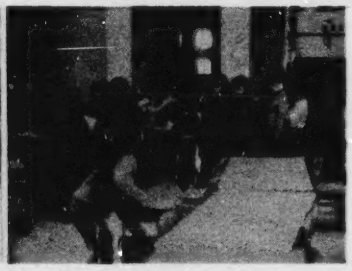

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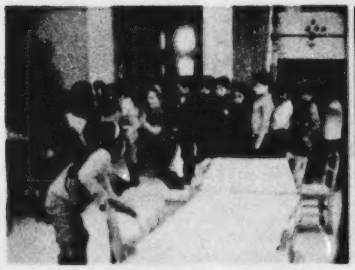

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The teacher turns back and stills this "disruption" with a smile and a firm gesture. However, the immobility of the regular class session has been broken and the girls bunny-hop out the door. It is clear that the children have the ability to dance; why were they so frozen and awkward earlier? Something in the teacher-student relationship was affecting their behavior. She made them feel awkward.

The next scene on the film shows students gathered in a semi-circle on the floor. Two boys are holding up a very large reader. The teacher is not with this group, but is seated off to one side with another student. Using a long stick as a marker, each student points out and reads a word. Pace is slow and unsynchronized. There are no sustained interactions among the students. They are lackadaisical, and occasionally smile; their attention wanders a great deal. There is no group-wide focus or network of movements.

Next, the students sit scattered around the room while they work on worksheets handed out by the teacher. As in the reading session, there is little interaction and no concentration. The students spend a great deal of time just looking around the room while slowly working with their papers. The major point of focus in the room seems to be the camera. Everyone looks at it once in a while. Because the students are widely scattered and rarely interact, there are few opportunities for interpersonal flow to develop. The few occasions when it does are too brief for any clear description of it to be made.

The next section of film shows the class washing up for a snack and then eating it. The snack is peanut butter on pilot biscuits and milk. Most of the class sit idly looking around the room or making brief unsustained conversation with their neighbors. But one group of six girls (all but two of the girls in the class) is more involved and animated. They are involved in a very fluid and flowing series of interactions which start with them all seated and in apparent conversation. Three of them stand and confront each other in an intense physical and verbal fashion; the purpose seems to be to find out who is taller. There is animation and laughter(Illus. 89-91).

89 90 91

Unfortunately,the camera does not follow this episode to its conclusion but cuts to the rest of the class who are behaving much as

before with no sustained interaction. The camera then swings back to the six girls who are now busy toasting each other with their milk. This process is carried out with great glee and is very smooth and flowing. After they finish their milk and make their last toast they get up and leave the table (Illus. 92-94)

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Again the film record has shown the children operating as a group, fluid and hooked together, with a great deal of zest and interest in their activities. This energy potential was not reflected in the organized sessions of the class. The teacher could not tap it, and indeed seemed to destroy these interrelationships by her very presence.

The film coverage ends with a short session of the children working with worksheets. For the most part, behavior is the same as earlier except that a number of the girls are now working together. The only new feature is that several students approach the teacher for assistance, and the brief interactions which follow show her to be more fluid and the students more relaxed than in the earlier portions of the film. The significant difference may be that these represent private one-on-one communications rather than individual interactions with the teacher in front of the whole class. Again, unfortunately, the camera does not record these interactions in detail; and the sequence as a whole is too short for any patterns to be observed.

While the film record of this class is in many respects less complete than that of the mixed prefirst and second grade class in Kwethluk, it seems that here, too, the teacher cut across the interaction patterns of the children and was generally unable to achieve smooth communication with them. Certainly many factors are involved, but the differences in pace and movement, so clear in the dance sequence, were certainly part of the reason that she was unable to make the complete contact with the children.

A Kindergarten Music Class in Bethel

The class involves the same group of students as were in Miss Kinderbelle's class, and the same room is used. The students are seen with a different teacher, Mr. Music. He was a tall Anglo in his first

year of teaching in Alaska and had responsibility for the music program of the school from kindergarten through high school. His specialty was the high school band program and he came to the kindergarten class once a week (Collier, 1973: 88-89).

As in the beginning of Miss Kinderbelle's class, the students are seated in two rows of chairs: boys in front and girls in back, but without the intervening desk. As the film starts, the teacher is seated in front of the group, but soon he stands and remains standing for most of the remainder of the class. Since he is tall, the boys in the front row have to tilt their heads far back in order to follow him. Off to one side and moving around a great deal is the eighth boy mentioned as playing only a peripheral role in Miss Kinderbelle's class.

The teacher begins by asking what they would have on a farm if they had a farm, leading up to the song, "Old MacDonald Had a Farm." This analysis is not concerned directly with content or the verbal portion of the classes, but it might be noted that he gets no verbal reply to these questions, a not surprising response considering the hundreds of miles of snowy tundra surrounding the school. The children are fidgety, twisting and turning in their seats. Occasionally, some stand up and look around the room. None of these movements are group-wide but rather represent individual behavior with no clear connection to the actions of their classmates except in general character and pace. There are brief occasions when they focus in on the teacher, who is quick and linear in his movements, though not as much as Mr. Principal in Kwethluk. The peripheral eighth boy starts acting up for the camera at this point, making faces and going through contortions. The rest of the class does not pay any attention to him, but Mr. Music comes over and firmly pushes him down in his seat and admonishes him verbally and with hand gestures. The class starts to sing "Old MacDonald" and for a period focuses up at the teacher as he stands with his hands in his pockets, singing and keeping time with nods of his head (Illus. 95-96).

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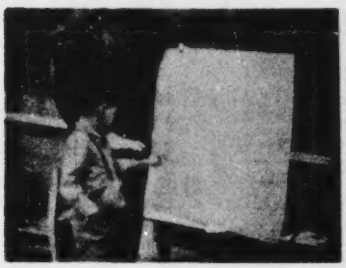
After a while, this unity begins to collapse as the students again begin to look around the room and fidget in their seats. At one point the song changes to one with a key line: "Little Peter Rabbit had a cold upon his chest, and he rubbed it with camphorated oil" sung to the tune of "John Brown's Body." The teacher can be seen rubbing his chest to emphasize this treatment.

Student attention continues to fluctuate, and there is no synchronization of pace even though they are singing. The boy who acted up for the camera has been moved off to one side following more contortions. The scene concludes shortly after he is moved.

While student attention toward the teacher was sporadic compared to the Head Start class already described, it was still more sustained than in the earlier session with Miss Kinderbelle. This may have been because there was a more clearly defined group activity, singing. The improvement was only relative, however, and Mr. Music was unable to sustain the periods of attention and involvement that he occasionally created.

The teacher followed "Little Peter Rabbit" with a session of singing the ABCs. The format changed somewhat as individual students were brought forward to point out the letters on a chart and sing them. The coverage starts with the teacher and one of the boys standing by the alphabet chart, the boy pointing and singing. Almost immediately the teacher grabs the boy's wrist and moves it along the chart. There is no flow to this process, the teacher and student being out of sync both in pace and style. The teacher speeds up his progress down the row of letters and introduces hand movements with abrupt pauses at each letter which are so forceful that they bend the chart back at the point of impact. As in the earlier example of Miss Kinderbelle manipulating the boy in the dancing scene, the student goes passive and is dragged along by the teacher. The boy's shoulders and hips become discordant in their relationship to his hand movements and his body is thrown out of balance. This lack of balance and coordination is not altogether clear in the still form of the film (Illus. 97-99).



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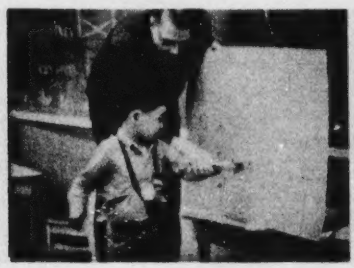

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A girl follows, and the teacher starts her down the row and lets go of her arm to turn and encourage the rest of the class. Her movements become smoother and more balanced: note, for example, in the still photo that her arm and body are more closely linked than when the teacher was moving her (Illus. 100-106).

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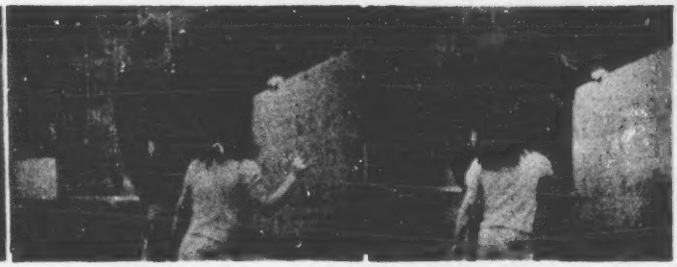

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When she reaches "T" the teacher suddenly grabs her wrist and brings her back one letter, the whole motion taking about one second, and lets her continue. In both this correcting movement and the earlier guidance the teacher's movements speeded up the girl's movements, stretched her out and threw her body off balance. Her movements and the teacher's are completely out of sync and there is very little flow in the interaction. The teacher interrupts her flow of movement but is not able to get her to match his, or his to match hers.

Throughout this lesson the rest of the class sings along but with the same irregular behavior described earlier: fidgeting, attention wandering, rocking back and forth but with no shared pattern to their actions.

The final scene of the film shows the class first standing in front of their chairs while the teacher starts to get them dancing and then marching in a circle around the room to music from a record the teacher has started to play. The movement around the chairs is somewhat slower and there is a bit more unison than in the similar activity with Miss Kinderbelle. But the film record is too brief to see whether or not this pattern is maintained and what its characteristics are.

Both Mr. Music and Miss Kinderbelle consistently cut across the flow of student movements, breaking up their involvement with the activities they were engaged in. These interruptions cannot have served to enhance the messages that the two teachers were trying to convey when they attempted these interactions and most likely served to make all communications with the children more difficult. That the children were capable of developing flowing interactions with each other was demonstrated on two occasions by the girls, both times with the teacher absent. With rare and momentary exceptions, no such patterns of flow developed during activities directed by the teachers and the general pattern was one of chaotic, undirected non-verbal behavior which suggests that the general process of education was far from what it might have been. It is important that in neither case could the teachers be charged with being lazy or not trying, although they did not exhibit the intense effort put forth by Mr. Principal.

A Second Grade Class in Bethel

This class was taught by Mr. Scout, a young man of small stature who had taught several years in Alaska. In terms of this study he was an "Anglo" but perhaps only marginally, as he was the son of eastern European immigrants and had been raised in New York City (Collier, 1973: 93).

The class had some twenty-eight students, and the room was fairly small. As a result, there was not much open space, and seating was in rows of desks, although the students were not in them much of the time. This class had the highest proportion of non-Native students of any of the classes studied in detail.

The film coverage of the class opens with Mr. Scout in the back of the room, his hands cupped to his mouth, giving instructions to the class at large as they prepare for recess. While he is addressing the class, one of the boys approaches him and taps him on the chest in an attempt to get his attention. Mr. Scout, without breaking his focus of continuing instructions to the class, puts his hand on top of the boy's hand. The boy moves back and gets something from a desk and returns. The teacher finishes talking and draws back with the boy toward the corner of the room where they can then be seen in communication. The process is a smooth flow of interaction from start to finish. Mr. Scout had continued his directions to the group, signaled the boy that the message was received, and had then followed up with the attention that the student had sought. Significantly, the coverage of the class starts with a student initiating communication with a teacher and getting an immediate and smooth response, an occurrence quite rare in most of the classes--but common to this one. In fact, this brief sequence almost defies the nature of teacher-to-student relations in this class (Illus. 107-110).

107 108 109 110

While Mr. Scout and the boy talk, the rest of the class close up their desks and move to the front of the room where they get their coats and congregate around the door. The teacher then comes to the front of the room and puts on his coat. The whole class is now in the small space in the front of the room, milling around, but with no congestion or friction of movements. Their pace is shared, and they have a good sense of each other's whereabouts, making it possible to move around without bumping into one another. Several of the students approach Mr. Scout to talk to him, apparently about something on the floor as all eyes turn down toward something off-camera. Then the class casually go out the door without lining up; and, in the midst of them, goes the teacher, leaving several students unsupervised in the classroom. According to John Collier, this was quite unusual, indeed unique, in the classes he observed (Collier, private communication). Others have noted that school and state regulations often forbid teachers to leave students unsupervised in classrooms (Connelly, private communication). Whether or not this was the case in Alaska is not known, but it is a significant reflection of Mr. Scout's confidence in the children that he did leave them unsupervised.

The students that remain in the classroom are all busy. One boy is working at his desk with pencil and book, oblivious to three girls who busy themselves putting away a large roll of paper and then distributing cups and napkins to all the desks. One girl, moving down each row, pours milk into the cups. All of the students in the room appear to be very sure of themselves. There is no hesitation to their movements which are smooth and relaxed. This sense of purpose and direction, with and without the presence of the teacher, was characteristic of this class and sets it apart from all other classes filmed, with the exception of the Head Start class. It is particularly important to note that both here and later, the children had purpose and direction even when the teacher was absent.

The other students start to drift back in, followed by the teacher. They sit down and start to eat crackers and drink milk while Mr. Scout sits in front and reads a European folk tale. He is expressive in his reading style and makes many hand and arm gestures. The students sit

listening intently while they eat. Some lean forward in their desks and, a great deal of the time, they focus their attention on the teacher. They are quite relaxed in this behavior, and some students alternate between books on their own desks and the story the teacher is reading. It is not clear whether they are following the reading in the book or are looking at books unconnected with the story.

The snack period and reading ends, and the class cleans up and gets prepared for other activities. There is a surface appearance of chaos, but it becomes clear that the activities all have a purpose. Desks are cleared, things are put away, and the students begin to form into several distinct groups and areas of activity. With no apparent direction or burst of energy the class has gotten down to academic business. There are three reading groups in the back of the room, one of which is in the middle of the room and engaged in individual activities and two groups who are involved in art projects in the open space at the front of the room.

Throughout this process of getting organized, there is a great deal of interaction among students and between students and the teacher. In one brief period he talks briefly to ten different students either individually or in small groups. Some of these interactions he initiates; but fully half are clearly started by the students. His movements in these encounters are at the same pace as the students'. The flow of movements are smooth; there are no signs of friction or missed signals. This smoothness is particularly remarkable as most of these interactions take place while the participants are walking around (Illus. 111-116).

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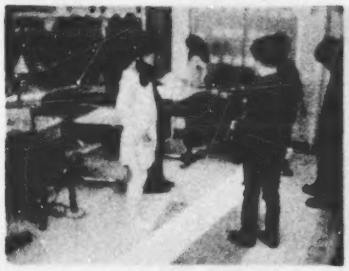
The frequency and number of teacher-to-student and student-to-teacher interactions in this class was unmatched in the total film sample. This section of the class also shows another feature which makes his class unique: the ability of the class to get itself together without the constant presence and direction of the teacher.

Once the groups are set, there is a great deal of interaction within them. Mr. Scout moves around for a period, and students pursue him with papers and questions and then return to their groups. Eventually he seats himself at the rear of the room with a reading group; fully half the class is out of his sight.

The camera focuses in on one of the art groups. They have rolled out a long sheet of paper and walk back and forth looking down at it. They move together as a group (Illus. 117-119).



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Mr. Scout can be seen, briefly, gesturing in wide rounded gestures to the group he is with. The camera pans back to the front of the room where most of the art group is down on the floor at one end of the paper, partially obscured from view by the desks. Two views of them show the intensity of their focus and the degree to which it is shared (Illus. 120-121).

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Two other students in the front of the room are working on separate projects on the floor. Both groups are quite active, their focus and concentration clear. Their bodies, bent over the papers, move back and forth, and their hands are busy. There is a great deal of interaction; they look up at each other and then down again at their work. This sequence shows what interested and involved students look like; their orientation is toward the project, and their movements are shared and coordinated. This is a group project, and they function as a group.

The students at the desks are working individually, mostly with Science Research Associates (SRA) reading materials. They glance up occasionally, but there is little drifting of attention from the materials. For the duration of this period there are students moving around all the time but always with an air of purpose. They come and go around the teacher throughout the period; he always responds.

Following a break in the filming, the next footage of this class shows that the students are involved with a math lesson. Mr. Scout is at the board, explaining a process and pointing out each step. The students are sitting and watching intently, some leaning forward or half-standing to get a better view (Illus. 122).

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They respond to questions with animation. After a while the teacher hands out sheets of paper, and the students work at them at their desks. Concentration is high; everyone is busy with problems or with occasional consultation with neighbors.

The teacher can be seen working with a number of individual students. He crouches on the floor next to them and looks at them a great deal, watching their responses. All his other movements and actions are directed toward the problems at the desk, as is the attention of the students who rarely look at the teacher but focus rather on the work-sheets and what the teacher is showing them (Illus. 123-124).

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Most of these interactions are filmed in too little detail to make clear statements, but one sequence follows an interaction from start to completion. Mr. Scout walks down one row looking at students' work. Spotting a problem, he stops beside one boy and starts to show him something on the worksheet (Illus. 125-127).

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Then, to explain the process more clearly, he gets up and returns with a number rod (set of wooden beads on a rod) which he and the boy set up while two other boys watch. In one sequence of this process he moves his hand across the table, setting up the base while the boy picks up the rod and moves it across the desk, getting it ready to place on the base. The movements of the teacher's hand and the boy's hand with the rod are at the same speed and follow each other across the desk in a flow of motion. With the rod in place, the teacher makes more explanations, waits for student response, explains more, then waits again. Waiting after explanations was characteristic of his style; there seemed to be no pressure for immediate response (Illus. 128-133).

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Earlier, Mr. Scout and individual students were seen in brief encounters that were notable for their frequency and their flow. This last sequence gives a suggestion of the foundation on which those interactions were probably based; i.e., long, patient, one-on-one interactions with students in which he was able to learn to move together with the students.

During this math period, the class as a whole is continuing in its high level of concentration. Later, as the students come close to finishing the assignment there is a little more restlessness. Students stand, stretch, then continue to work. When the class ends, the students get their coats and leave the room in the same easy manner described earlier.

This class is important in the film sample because it shows an Anglo teacher who has been able to create a class situation in which student-to-student interactions and teacher-to-student interactions are frequent and fluid and take place in the context of intense involvement with the processes of education. It suggests that it is possible for a non-Native teacher to make adjustments which lead to the involvement of the Native children. This raises the question of how it is done. Mr. Scout seemed to base his success on a pattern of leaving much of the operation of classroom processes to students while he spent large portions

of time making contact with individual or small groups of students. Additionally, many of the activities of the class were group activities requiring group interaction, unlike the characteristic pattern of other classes in which the curriculum was based on activities which students performed alone and apart from other students. The effect of this structuring of the class was to leave the control of pace and process very much in the hands of the students so that they were able to proceed at a pace and in a manner comfortable to them. Equally important, the classroom environment created by Mr. Scout was one in which it was possible for him to learn the movement patterns of the children and they to learn his. This was so because his interactions with them were often on an unhurried, informal, one-to-one level which allowed for mutual adjustments. The circumstances were a direct result of the way in which Mr. Scout had structured the class.

A Home in Kwethluk

This was the home of a family in the village. Most of the activities of this home take place in one room, estimated to be twelve feet square. It is crowded with a stove, table, washing machine, benches and chairs, a wash tub, shelves, wash stand and a variety of other goods as well as six to ten people during the filming. Many activities take place in this room: washing clothes, cooking, eating, washing and dressing children, as well as a great deal of socializing. At several points in the filming all these activities are going on at the same time; there is a constant coming and going of people. Despite this constant activity there is little sense of congestion and all these activities continue at a slow, steady pace amid smiles and laughter. No one bumps into anyone else. No one gets "in the way." None of the activities appear to conflict with each other. People make subtle adjustments for each other as they move around, an intertwining of movements which prevents any friction from occurring.

One brief occurrence in the filming may serve to illustrate the tone of interrelationships. An older woman, standing in a doorway next to the table, reaches across the table to hand something to a man seated at the other end. A young woman sits between the older woman and the man, with her back to the older woman. As the older woman starts to reach across the table, the young woman swings her head out of the way, allowing smooth passage of the object across the table. When the older woman draws her hand back, the younger woman moves her head, emphasizing the series of smooth and perfectly timed movements. Meanwhile, the other people at the table have followed the whole process from start to finish, as can be seen by the rise, slow rotation and drop of heads as the object is lowered to the table in front of the man as he and everyone else look at it (Illus. 134-139).

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In this brief example we can see acute interpersonal awareness, smooth pacing, group-wide involvement in or awareness of activities, and the smooth flow of movements of people relative to each other. Most of these movements and interrelationships are undramatic. In viewing the footage, what is impressive is no one sequence or event, but rather the totality of the footage. Carefully ordered use of space, a shared pacing and smooth interrelating of movements make it possible for a large number of people in a small space to converse, eat, cook, wash and otherwise carry out the necessary activities of the day with little sense of crowding, friction or stress. This kind of order and the relaxed atmosphere it creates can come only from a highly formalized sensitivity to space and the motions of others. There is also a timing and controlling of movement and activities so that no conflict occurs, an interrelationship of people's motions which is the epitomy of flow.

General Findings of the Analysis

These sections of film have been described to give the reader some conception of the data on which the general conclusions of this study are based. These conclusions are based on more than the cases described and draw on film not only of other classroom situations but also on film records of village life.

This study is concerned with patterns of pace and flow in human interactions as seen in the film record from western Alaska. The analysis found that there were distinct differences between Anglo and Native patterns of pace and movement. It also found that there were essentially three patterns of pace and flow in interactions seen in the films:

1. The first pattern is one of great discrepancies in the pace of participants,combined with low levels of flow

2. The second pattern was one of little difference in pace among participants,combined with generally high levels of flow

3. The third pattern is an intermediate one in which differences in pace are somewhat less severe and flow is intermittently high and low.

These findings and their possible significance are the subject of this section of the study.

The characteristic pace of Native children and adults was, relative to the Anglos, slow. While there was some variation in pace with changes in activity, it was essentially the same in all circumstances: in school, around the villages, at home and in church. This slow pace was accompanied by a style of movement best described as soft and rounded. By this I mean that motions tended to be circular in direction and rarely abrupt. The consistency of this pace style and the fact that it was shared by both adults and children suggests that it is the characteristic pace of Eskimos in this section of Alaska.

The Anglos seen in the footage came from a less homogenous cultural background and experience than the Eskimos. Correspondingly, there was more variation in their pace and movement styles. Within the range of variation, with two exceptions, they did form a clearly definable group with regard to pace and movement style. Characteristically, their pace was fast to moderate and movements were linear and often abrupt. On an individual level, these patterns were quite consistent, although there was a suggestion in the footage that Anglos in stressful situations tended to speed up their pace. (Eskimos, on the other hand, appeared to slow down in stressful situations.) I assume that pace and movement patterns are reflective of people's cultural background. Assuming this, the individual consistency and relatively similar patterns of Anglos seen in the films at least suggest that these are patterns of pace and movement characteristic to Anglos in general. This suggestion is reinforced by the fact that the pace and movement patterns of Anglos in footage taken by Edward Hall in New Mexico was quite similar to that which I have just described. Interestingly, the two non-Native teachers who did not fit into this general Anglo pattern are known to come from different backgrounds than the other Anglos. One was raised in the Kuskokwim region and the other was of Eastern European background (Collier, private communication).

The pace of each group appeared to be independent of the other when they were together. The pace of Anglo teachers did not seem to be

affected by the pace of the Eskimo children or adults with whom they dealt. Likewise, the pace of Eskimo children seemed to operate independently of the pace of their teachers. There were few cases of mutual adjustments in pace between individuals of the two groups.

These differences in the pace of movements carried over into the pace of activities. These differences were clearest in the classroom activities. Anglo teachers generally ran their classes on a schedule that gave relatively short periods of time to each activity. Transition points are clearly defined and sharp. Eskimos handling similar processes structured the processes differently. Things took longer and the transitions between activities were less sudden and distinct. Anglo teachers were generally brisk in helping individual students, making corrections, pointing things out and leaving. The two Eskimo aides seen in the footage took a different approach: helping, waiting, watching, helping again, waiting some more for long periods of time, even to the extent in one case of remaining with two students well into the next period of activities.

The significance of these differences between Anglos and Eskimos is not that they show Anglos and Eskimos to be different from each other. That is already known. What is more important is the effect that these differences have on interactions between people. The three patterns of pace and flow in interactions which I listed at the beginning of this discussion begin to suggest the effect of differences in pace and movement styles on communication. I shall now discuss these three patterns in more detail.

The first pattern was one of great differences in pace and low levels of flow. This was the characteristic pattern of Anglo-taught classes. Three of the classes described earlier exemplify this pattern: Mr. Principal's, Miss Kinderbelle's and Mr. Music's. In all these cases the teachers move in abrupt, linear movements, considerably faster than the children. They are usually several feet away from the children. Visually, the children and the teachers often appear to be operating in different rooms from each other because their movements are so unrelated. The children are not clued into the movements of the teachers; they do not follow them, repeat them or make adjustments for them. They rarely focus on the teachers for more than short periods of time. There is no flow; the movements of the children are unrelated to those of the teachers. The teachers, on the other hand, appear equally oblivious to the children. They do not respond to the movements of the children, make no adjustments for them. Again, there is no flow; the teachers' movements are unrelated to those of the children.

Is this lack of flow a function of distance? Are the teachers too far away? While proxemic factors appear to be important in communication in Alaska, they do not seem to be the significant factor causing low flow in these particular cases. There <u>are</u> times when the teachers move close to the children. Rather than improving the level of interrelationship of movements, the differences and difficulties are only dramatized. The children go one way and the teachers go another. Their movements are totally unsynchronized; they throw each other off balance. The children freeze up, practically tripping over their own feet. The

teachers move quickly and drag the children after them; mutual frustration becomes evident. The proximity of the teacher and the children does not improve flow. It serves only to define its absence.

A particularly striking aspect of interactions that fall into this first pattern is the effect of Anglo/Native relationships on interactions between the Native children. The lack of flow in interactions between Anglo teachers and the Eskimo children in these circumstances appears to undercut interactions among the children. While they move at the same pace, their motions are not synchronized. They have a low level of awareness of each other as well as a low level of awareness of the teacher. Heads turn aimlessly, bodies rock back and forth, posture is often limp. Most of this behavior is discordant: one person is rocking one way while another is rocking in a different direction; eye focus drifts in different directions; postures and arm motions are unrelated. This uncoordinated behavior gave many classes an air of loneliness and waiting with no purpose. This kind of behavior is most uncharacteristic of a group which is supposed to be together for a purpose (Mead and Byers 1968: 66-105). In effect, there is no group, but only a collection of isolated individuals.

What caused this isolation with its chaotic movements and behavior? One factor is the lack of flow between teachers and children. The teachers do not provide a focus or direction for the group because their pace and movement styles serve to isolate them from the children and disrupt communication on all levels. The teachers are in control of the physical space of the room. Not only do they intrude upon the flow of movements of the children by their own actions, they also arrange rooms and activities in such a way that isolation is encouraged. Most teachers depend heavily on workbooks and worksheets which children are expected to do alone with no help from other students. These individual activities cut across group-wide currents of interaction and made teacher/student interactions brief, one-way communications regarding the contents of the assignments. The same curriculum, indeed the same worksheets, could have been handled in different ways. In several classes this isolation was further emphasized by taped boundaries on the tables to separate the children from each other, usually by three or four feet. These factors served only to exacerbate problems caused by the lack of flow between children and teachers. Had these teachers been aware of what was happening, could they have taken actions to avoid or soften the consequences?

The second pattern of pace and flow in interactions was one of shared pace and high levels of flow. This was the pattern characteristic of interactions in the villages and in the Head Start class. Movements, even apparently random movements, were often highly synchronized. While children in many classes rocked in different directions, the children in Head Start rocked together, in and out, in and out, like a pulsating unit. While other teachers dragged children along, throwing them off balance, even disciplinary movements in Head Start were so well coordinated between child and teacher that they almost took on the appearance of a dance when they were viewed in slow motion. The hook-up between children and teachers was so close that a slight rise of the teachers' head would be mirrored by a slight rise of all of the children's heads.

In home scenes, this unity and synchrony made it possible for diverse activities to take place in small quarters with little visible sense of congestion. Both in homes and in Head Start, relationships were characterized by a certain air of restraint or, perhaps more accurately, a sense of carefulness and delicacy. The effect of this synchrony and care was a level of intensity that was totally lacking in most Anglo-taught classes.

The initial key to the high level of flow was certainly the fact that pace was shared; people operated at the same pace. This made it possible for them to coordinate their motion and activities. Movement styles were also similar, so that motions could be easily meshed. People usually operated in close proximity to each other. This was possible because they moved together but it also made it easier to be aware of each other.

The first pattern was characterized by the isolation of individuals; the second pattern was characterized by the unity of the group. People were close together: they moved together; they worked together on the same things; and there were few individual activities. In prefirst the children sat isolated from each other when coloring and looked sleepy and bored. In Head Start, they crowded close together and appeared animated and excited.

It is significant that an Anglo teacher was able to create a class with these characteristics. That class was Mr. Scout's class, already described in detail. He was obviously highly sensitive to non-verbal signals and perhaps inadvertently had created a class structure which did not cut across the currents of interaction among the children. Many activities were group activities in which he was only marginally involved. The pacing of these activities was largely in the hands of the children. Many of Mr. Scout's interactions with students then became relatively low-pressured, one-to-one communications. They often took the form of the extended help, watch, wait, help again process described for the aides. By placing many interactions on this level, Mr. Scout created circumstances in which he and the children could make adjustments to each other. The result was that the level of flow between him and the children was quite high.

In both Head Start and Mr. Scout's class, the instructors had not cut across the thread of interrelationships. Consequently, they were able to get high intensity involvement from the children because they had only to gain the interest of a few for that interest to be conveyed to the whole group. They tied into the current that held the children together. For this reason their presence was not needed for student involvement to develop and continue. The remarkable aspect of these two classes is the degree to which children were involved and focused in the absence of the teachers.

Comparable levels of teacher/student flow were seen in the upper grades class at the Moravian Mission near Kwethluk. The class was taught by a young Anglo woman who had been raised in the area and she

appeared to have picked up a pace and style of movement little different from that of the Eskimo students in her class. This made possible the high level of flow seen in the class which was quite conventionally structured. For some reason not evident in the film, the level of intensity did not match that of Head Start or Mr. Scout's class although student involvement in activities was more than adequate.

The effect of this high level of flow in interactions and the sense of unity of groups was that both in school situations and in village scenes there was a clear sense of direction. A portion of the footage recorded the preparation of fishing boats for use on the rivers as soon as the ice broke up. Men are busy patching boats, moving them down to the river, and overhauling motors while the children play along the shore, poking at the breaking ice. In these activities, the people all move at the same pace and move among each other with only subtle adjustments in their movements as they pass. Each is intent and simultaneously aware of the others. Another group, sitting in the sun, play with the children and watch the activities. A small number of people, scattered over several hundred feet of riverfront, have more unified focus and intensity than Mr. Principal's classroom of twenty students. This focus and unity culminates with the men taking their families, in their boats, up and down the barely ice-free river. On the banks the onlookers' heads turn, almost simultaneously, as each boat passes.

The third pattern of pace and flow found in the footage was an intermediate one. Differences in pace were not as extreme as in the first pattern but were still evident. The level of flow was on occasion relatively high but inconsistent; there were periods of low levels of flow. There were only two cases that fall into this pattern, both Anglo-taught classes at Kwethluk. In one case, an upper grade class taught by Mr. Kweth, a degree of unity and flow was generated by an imaginative lecture on mental health which drew heavily on comparisons of life in the village to life in the "Lower 48." The comparisons were highly favorable to the village. Mr. Kweth's pace was moderate and movements restrained. At the end of each portion of the lecture, he would wait and look around rather than pushing on immediately. When asking questions he did not pressure for immediate answers but waited until there were responses. These patterns were visible on the film and confirmed by checking the audio record of the class. The students had a rough degree of synchrony of motion, heads bobbing and turning with some degree of intergroup unity. There were low key interactions between individual students which appeared related to the lecture, and eye focus on the instructor was fairly consistent. There were periods, however, when the unity seemed to slip somewhat, particularly as the lecture drew to a close. The film record does not show the class engaged in other activities with the teacher, so the overall pattern of the class is not clear.

The second example was an intermediate grades class taught by Mr. Luk. The film shows the class engaged in a number of workbook-related activities. Mr. Luk has a moderate pace and an expressive linear manner of gesturing which was relatively unabrupt. He generally worked in close proximity to students in small group situations. When he was with a group, there was unity of focus and motion among the students and a

moderate level of intensity. Like Mr. Kweth, Mr. Luk moved somewhat faster than the students, but waited at regular intervals for them to catch up. He also did not push for quick answers but waited for responses. However, once he left a group of students, the unity and intensity fell fairly rapidly. For this reason, there were little circles of activity and interest in the room wherever he went, surrounded by relatively uninvolved students. He could interest students when he was immediately involved but was unable to hook into the currents of the class to involve large portions of the class. His structuring of the use of the workbooks also served to interrupt interactions among the students and break up the unity of the class.

In both these cases, teachers who were somewhat different from the children in pace and movement patterns were able to obtain interest and unity when they related directly to the children. These teachers made adjustments in their behavior to allow the students to "catch up" and appeared to have some awareness of differences in pace. The content of Mr. Kweth's lesson may have stimulated the involvement of the students. The problems and conflicts common in many other Anglo-taught classes had been modified but not eliminated as interest and involvement was dependent on the immediate presence of the instructor.

In general, the Native pattern was one of slowly paced activities and movements, carried on with a great deal of interpersonal awareness and adjustments. This interplay of movements created a sensation of unity of people and purpose, a current moving slowly but steadily toward some distant destination. Most of the Anglo teachers, with their quick pace and abrupt, impersonal style, cut across this current and left the students stranded in the classrooms like so many pieces of driftwood on the shore waiting for different waves and tides to take each person away. Mr. Scout and the teachers in Head Start demonstrated what could be achieved when this current was used and not disrupted.

What possible significance is there to these patterns? How can they help explain the difficulties and successes of cross-cultural education?

Human communication is a complex subject that occurs on many levels that are both interrelated and independent. The process of schooling in Alaska, primarily a process of attempted communication, is an illustration of the complexity of the process. The non-verbal patterns discussed here are but one set of factors in many that decide the course of events in these classes. Success or difficulties on the non-verbal level reflect as much as they decide the course of interactions on other levels. They sometimes reflect difficulties on the verbal level as well as cause difficulties on that level. Factors beyond the confines of the schools, or the villages, or even the state of Alaska influence the course of non-verbal interactions in the classes. Likewise, the course of non-verbal events may at times serve to compensate or cancel out difficulties caused by other factors.

An example of outside factors influencing the course of non-verbal interactions can be illustrated by the two Head Start teachers. Their smooth interactions with the children reflected the fact that they were

members of the same village: they were known to the children, no doubt related to many of them and were part of the same world. Their style of relating to the children confirmed and continued these relationships. They could have been self-conscious about their roles and taken stereotypical teacher positions and destroyed the creative and dynamic class that they had created.

Likewise, the Anglo teachers arrived with handicaps: strangers in an intimate community, representatives of an alien and generally hostile culture, a type of people known to be difficult and incomprehensible. Their non-verbal behavior reflected these negative factors and served to confirm them. A few broke away from the standard Anglo pattern, thereby not only improving the immediate process of communication with the students, but also to a greater or lesser degree negating some of the handicaps that they arrived with.

On a specific level, the film analysis showed that the fast pace and aggressive, linear style of movement of many teachers was deadly. In every case, the students responded with confused behavior indicative of the failure of the communication process. In extreme examples, the students froze up; the harder the teachers tried, the worse it got. This situation was aggravated by school assignments and class structures which isolated the students from each other and from the teacher. The fast pace of the teachers' movements, together with the form of those movements, made it difficult for any real communication to take place between students and teachers about anything, let alone the school work. The teacher's role became impersonal and distant. Significantly, communication among students became equally distant in these cases. Apparently, the tone of teacher-to-student interactions can set the tone of student-to-student relationships as well.

In contrast, Anglo teachers who made some form of adjustment for the difference in pace by waiting and not pressuring the students got significantly more response from the students and more interest in the school process. One teacher, Mr. Scout, who structured his class in a fashion that allowed many activities to proceed at student pace and style was rewarded with an intensity of involvement equalled only by the Native-taught Head Start. Related and equally important, his structuring of the class and relationships in it allowed him to spend extended periods of time with individual children, giving him and them time to adjust to each other and communicate. Over the period of the school year, this individual interaction would carry over into group-wide relationships with the teacher, as was evident in the film.

The patterns of Mr. Scout's class and Head Start suggest that Native children responded best to classes that were slow to moderately paced with a great deal of close, low key, unpressured interaction with the teacher and other students. This pattern was also the pattern of activities and interactions outside the schools in homes and village. It should be noted that "unpressured" does not imply low expectations. Mr. Scout clearly had high expectations for his students and traditionally, the environment of Alaska itself set high standards of performance.

Another study of teachers in Alaska found that students responded

best to teachers who combined close, warm relationships with high expectations and standards. On the other hand, teachers who had warm relationships with the children without setting high expectations got poor results as did teachers who operated at impersonal distances and set high standards. One of the most common complaints of students was that Anglo teachers and children were cold, distant and "unfriendly." This complaint was often traced to the fact that the Anglos operated at a greater distance from people (Kleinfeld, 1974: 11-34).

The findings of the analysis serve to confirm the importance of Native teachers for educational success in Alaska with the critical factor being the nature of their training. Trained to take advantage of their communication patterns and skills, Native teachers with average ability would have higher potential as teachers than all but a few exceptional Anglo teachers. This last point is important because no school program can plan on success based primarily on the employment of miracle teachers. The training of teachers in general and Native teachers in particular is a complex issue, but both the analysis of this film and other work with film suggests that the communication process between teachers and students is the key to good classes. The absence of reasonably good communication in the classroom will negate any curriculum or program; conversely, the development of comfortable and successful interactions may do much to override bad curriculum and programs.

Could Anglo teachers be trained to behave and present themselves in a Native style? Quite probably not, as communication and behavior styles, particularly on a non-verbal level, appear to be fairly automatic; conscious manipulation of these styles is difficult over extended periods of time. The analysis of the film showed the persistence of Anglo pace and movement, styles in situations in which they were obviously not working as well as the persistence of Native patterns of pace and individual movements, regardless of teacher activities. However, a teacher properly sensitized to the existence of differences might be able to structure classroom relationships and processes to allow some mutual adjustments of differences.

In any case, the analysis suggests that the discrepancy between Anglo teachers and Native children in pace and movement styles, with concurrent absences of flow, served to destroy the communication processes in the classrooms. Even minor accommodations on the part of teachers often served to improve somewhat on the unfortunate pattern. In one class the Anglo teacher's role in setting the pace of activities and interactions was minimized, and the classroom program created many circumstances where he could meet at close quarters with the children. This teacher was rewarded with high levels of flow, communication, and student involvement in the learning process. There is certainly room for improvement with regard to non-Native teachers. But the potential of Native teachers must be regarded as generally much higher. How that potential can be achieved is another question.

Both this study and the earlier study of film raise some question about the content of curriculum. How important is it to the creation of a successful class? The content of the Head Start curriculum was in many respects little different from that of prefirst. Mr. Scout taught

a class with a conventional curriculum. Mr. Kweth altered the content of his class to fit more closely the village situation and was rewarded with a great deal of interest, while in another case, very modest attempts at "relevant" subjects got response only when the material was presented by Native adults. There is no doubt that irrelevant, incomprehensible content makes bad situations worse, as in sections of prefirst and kindergarten, but to what extent can changes in the content of curriculum compensate for poor teaching? Does the creation of good communication networks in the class totally make up for curriculum content that is essentially negative? The answer cannot be found in this film record, but common sense suggests that the content of any school program has a cumulative effect. In this context, an exciting and successful class such as Mr. Scout's has to be viewed with some reservations, as would any Native-taught class that presented a totally Anglo curriculum. The cumulative effect of classes like these might be children well educated in Anglo terms, and even reasonably confident and secure as individuals; however, the very success of the classes might well serve to reduce their competence in Native circumstances. Issues such as these will become more crucial if political pressures and teacher training programs put more Native teachers in the classrooms.

These matters are beyond the scope of this film study. The main significance of this study is that it emphasizes the persistence of cultural patterns of interpersonal interactions in classroom circumstances and the decisive effect of those patterns on the educational process. Regardless of educational paraphernalia, curriculum content, or even teacher dedication, education cannot occur if there is poor communication in the classroom. It appears that non-verbal patterns of pace movements in interactions may make, and certainly can break, the communication process in the classroom.

PART THREE

METHODOLOGY

This chapter is devoted to a brief discussion of methodological issues related to the use of film in research. While this discussion is focused on the use of film, most of the comments are equally relevant to the use of video--providing that there is an awareness of the differences between the two mediums. A brief comment on the differences between film and video is included as part of this section.

General Considerations

The purpose of using film as a means of recording and analyzing cultural processes is to understand more fully the dynamics of non-verbal interaction. The most important characteristic of film records is that they record complex relationships and detail, freezing these for prolonged study at a later time. The unaided observer cannot compete with the observer with a camera because the human eye and brain cannot hold relationships and details unchanged for future use. Equally important, the camera is less selective than the eye in several important respects. Within technical limitations, everything in the frame is recorded as equally important. The eye alone focuses first on this event, then on that event. Once the event has passed, it is gone. For this reason it is difficult to perceive complex interrelationships with the eye alone except through intimate experience. With intimate experience the knowledge is personal, and difficult to validate to others who do not share the experience. Properly made and analyzed, film can objectify the immense human ability to perceive and interpret significance in complex and seemingly unrelated cultural phenomena.

The proper use of film requires that the film be made and analyzed in a manner which combines the camera's potential to record relationships and detail with the human capability to perceive pattern and significance in complex behavior and events. The purpose of this section is to discuss some approaches and procedures which are designed to move toward an achievement of these ends. Its focus is on work which involves handling relatively large quantities of visual data. In these circumstances, the time-consuming and relatively static techniques of micro-analysis are generally impossible and inappropriate.

Data Gathering with the Camera

The camera is an aid to observation, not its replacement. The basic and most common means we have of gathering data is our own eye because it is something we do all the time and for which no equipment is required. The value of a camera and the film it produces lies in its

potential to refine our normal and habitual day-to-day perception of what we see. Data gathering with the camera should therefore be approached as a form of observation in which the camera can be considered a somewhat expensive pencil with which we make visual notes. The quality of our notes will depend not on the equipment but on the quality of our observation at the time the film was made.

This emphasis on the camera as an adjunct to human observation raises the issue of "objectivity." As anthropologists and other social scientists have become involved with the study of visual anthropology, they have been shocked by the discovery that photographic images (stills, film, or video) are not, strictly speaking, "objective." They have discovered what photographers have known for a hundred years--that "cameras don't take pictures, people do." Many discussions have centered around the implications of this fact.

The discussions generally appear to operate on the assumption that there must be a way to film a cultural process without "distortion" caused by the cultural filters of the cameraman or the presence of the equipment. The debates are not unlike arguments on how to draw a random sample, a problem that has a technological or procedural solution. Realistically, as well as philosophically, there is in fact no such solution in data gathering with the camera. "Distortion" is both inevitable and potentially useful. It can provide a viewpoint without which the record would be unintelligible. The production of useful film records of cultural processes requires responsible exploitation of our biases combined with a sensitivity to other viewpoints which further illuminate our research findings. It is highly irresponsible to pretend to make an objective film record.

Because the camera is no more than an aid to observation, the process of recording with the camera should focus on observation rather than on technological conventions of the film industry. These conventions are culturally determined and directed toward the production of entertainment film rather than toward obtaining a research record. It may never be able to make an "objective" record, but the fastest way to make film that is totally biased and useless for research is to try to make one that looks like what is seen on television or in the movie theatre.

Good observation with the camera requires some discipline and direction, often provided by a set of defined questions. Just as a good interviewer must be ready to follow up on unanticipated subjects which develop in the course of an interview, the observer must also try to be aware of the total context and be ready to move off in new directions when unanticipated events or actions occur. The purpose of having defined questions and concerns is to force us to observe in an organized fashion. Without this organization, it is very easy to make chaotic and useless records. What are we trying to find out? What are we looking for? These are starting points for a journey into the unknown, the points of reference without which we can become lost in the complex multi-dimensional jungle of human behavior and culture.

There are a few technological features of film which should be considered when recording with the camera if a full exploitation of the

film's potential is to be made. In particular, the ability of film to record both context and detail at one and the same time--a feat impossible for the unaided observer--should not be forgotten. Far too many researchers are seduced by the zoom lenses of modern cameras into making records composed exclusively of tight shots which show detail but little context. Occasionally, these records may be artistically and emotionally satisfying, but their research value is almost nil. Responsible analysis of film requires contextual information, a record of overall relationships, patterns, and contrasts. If there is doubt as to whether to make a close-up shot or a wide shot, it is almost always preferable to make the wide shot.

These comments lead to the one firm rule of film observation which I would suggest--shoot film in as inclusive a manner as possible. Make a consistent effort to record context and process, the spacial and temporal surroundings of the circumstance under study. This can be done by shooting many wide shots and careful panning of the camera to define the context of the focal point of interest. Making an attempt to record what goes before and what goes after the event is necessary even if there is no apparent connection or significance at the time. Later analysis may reveal connections and processes which you did not see. If the footage is not shot in an inclusive manner, these discoveries will never be made. Above all, do not restrict the recording to tight shots which show individuals or details apart from their surroundings. The details can often be read in a wide shot, but the surroundings cannot be seen outside the frame of a tight shot.

Beyond these simple suggestions, the basic process should concentrate on observing as carefully as if there were no camera. The precise nature of what to record and how to record is in large part determined by the subject matter and the reasons for investigating it. Subject to the above comments, the camera is used to record what is considered to be significant. If there is uncertainty about what is significant, record those situations which you think might contain significant data even if it is not apparent at the time. These decisions can be guided by past experience, other people's work, and by other people, whether they be the ones present or others in the field.

Filming should be done delicately and in an unobtrusive manner. Just how to do this is not easy to describe. What works for one person will not work for another. Perhaps the basic principle is not to confuse roles; be an observer, not a direct participant. The camera can, in fact, be an asset in this role definition for a number of reasons. It provides a clear and understandable function, "taking pictures." Unlike the usual observer, one can always look "busy" so that the participants do not feel obligated to draw you into their activities or can as readily use you as a source of assistance or diversion. The role and the camera allow you and them to ignore each other in situations which would ordinarily require a mutual acknowledgement of your presence. Exploitation of this "invisibility" requires a delicate touch which not everyone has. When in doubt, it is better to step back and concentrate on recording the overall relationships which are so important to film research. Regular discussion with staff concerning what disturbs the class and what does not can be an important guide to how you record.

On the other hand, improperly used cameras can be be very disruptive. This is particularly true when the equipment is used for aggressive, ego-centered self-expression. Ego, aggression, and self-expression have no place in film observation. The hit-and-run style of television news and documentary recording should never be copied. Look for signs of camera stress and disruption. If it occurs, step back, take your time, and start again slowly. The emphasis should be on observation. The results will be a particular point of view on the subject being filmed; another person would record it differently.

Analysis of Film Records

Film analysis is the process by which the film is mined for the information and understanding it can provide about the situations recorded on film. Many people shoot film. Many educators routinely accumulate video records of classrooms. However, very few of these records are ever analyzed in a systematic fashion and most are not analyzed at all. Film analysis is unromantic, time-consuming, and just plain hard work. Most people have no idea about how to do it and are further handicapped by viewing habits learned from watching television and theatre films. What I present here is an approach to analysis which should fit a wide variety of situations and individual needs.

The major problem faced in analysis of film is the immense amount of detail which is contained in visual records. The larger significance of the data is often lost because of the amount of detail. This problem is particularly acute in film of educational situations or applied field circumstances in which the volume of film is likely to be large and the range of variables uncontrolled in comparison to clinical film studies. There are a number of ways to deal with this problem of volume. The one suggested here represents what I feel to be the best way to exploit the special characteristics of film records.

Film, properly made, can record both infinite detail and complex contextual relationships. Most approaches to film analysis focus on the details, using preconceived probes and criteria to take the film record apart. In extreme form, these approaches involve detailed study and notation of each frame, commonly called micro-analysis. The difficulty in this approach is that it is primarily a static form of analysis which presupposes that the significance of the whole is to be found in the details of its parts. Human interaction and culture involve fluid processes in which multiple factors interact simultaneously. The significance of these is in their totality and not in their parts. Film analysis should start as a process which deals with these factors as wholes in movement.

Equally important, these structured approaches to analysis often fail to take advantage of the unknown. The contents of their findings are limited to those matters which were conceived before analysis was begun. One of the important features of film records is that they often record subjects and processes which were unthought of and even unseen at the time the film was shot. Many of the important moments and actions discussed in the analysis of the Alaskan film were unseen by the photo-

grapher when the film was made. They became apparent only during later analysis. Some provision must be made in analysis to increase the likelihood of discovering these unknowns.

Finally, highly structured approaches to analysis, particularly if centered on micro-analysis, make it quite difficult to handle a large quantity of film. This fact is not surprising since most of these approaches were developed for analysis of short pieces of film which recorded narrowly defined circumstances. These techniques are too time-consuming to be the primary analysis method for film studies of schools and other applied situations in which the film record is likely to be large, and indeed, should be large.

The solution which I suggest here involves an exploitation of the human ability to handle and make sense out of complex and seemingly unrelated details and interrelationships. Fine-grained analysis can be used to refine these perceptions. In discussing this methodological approach, I have also included some important, if mundane, procedural details which make analysis easier and more reliable.

Film analysis begins in the field with careful record keeping of what film was shot, when it was shot, and its temporal relationship to other film. This information is used to put the film together in the proper contextual order. If this is not done, it is likely that important errors will be made in analysis. As the film is processed and put together in proper order on larger reels, some kind of descriptive log should be made. This essential process is best done with a viewer that has a frame counter; otherwise, it can be done with a projector and a stop watch. The purpose is to create a rough index of the general contents of the film. This index serves several purposes. It begins the process of acquainting us with the film. It serves as a record of the order of the film in case sections get lost at a later data and must be returned to their proper location. If we are still in the process of shooting more film, the logging procedure can alert us to potentially important things we may be missing.

Formal analysis begins after all the film has been shot and logged. Film analysis is primarily a search for patterns and contrasts through a process of repeated viewing and comparison. It is based on the assumption that human behavior is patterned and that the significance of patterns of behavior can often be found through a study of the contexts in which they are present and absent.

The first phase of this search for patterns and significance is an unstructured immersion in the film record. Regardless of the specific research concerns of the film study, this first stage should be open-ended. The film should be viewed repeatedly and notes made of impressions and reactions. These notes should include notation of the portions which prompted these reactions and impressions as well as some indication of what specifically led to these reactions. This open viewing will often raise questions which may not have occurred before: these questions should be duly recorded. This repeated viewing should be continued until some overall patterns and significance are perceived and the film is totally familiar to the researcher(s).

The purpose of this open-ended viewing is to exploit the multi-dimensional character of visual data by applying the human ability to perceive pattern and meaning in complex interrelated details and processes. Important relationships, information, details and questions which might otherwise be missed can be discovered in this way and used to enrich and refine later stages of analysis.

The next phase of analysis is somewhat more structured in that it involves the application of specific questions and probes to the film record. The sources of these questions and probes are the original research concerns which led to the filming and whatever questions and patterns were developed out of open-ended viewing. For example, during open-ended analysis a pattern may have been perceived that "flow was much higher when Native children were in close proximity to a Native teacher." This can be stated as a question, "Is flow higher when Native children were in close proximity to a Native teacher?" This question can be applied to every situation in which Native teachers and Native children were in close proximity. Other questions might be less specific, such as, "What types of classroom structures do Native children respond to best?" This question might involve looking at all the film. The key characteristic of this stage of analysis is that the film or portions of the film are viewed with a focus defined by one or a number of specific questions or concerns rather than in an open-ended manner. This focused viewing often brings out specific details and patterns which can be missed in more open analysis. It is also the first stage of defining and validating more general statements of patterns and significance. As always, careful notes should be kept of reactions, impressions, conclusions, and the portions of the footage which triggered them.

The next phase of analysis is structured analysis of selected portions of film with the purpose of testing and defining the findings of the first two stages. The film is studied with the question, "What told me that?" The film to be examined is identified as triggering particular responses or conclusions in the first two phases. If these instances can be located, then specific, visible aspects of movement, expression, spacial relationships and time can be described as they relate to earlier impressions. These impressions cease to be impressions and become tangible statements which can be tested.

The testing is done by examining all portions of the film in which particular impressions or conclusions were triggered to see if, in fact, the identifiable variables are consistently present, and, if so, in what way. An overview of other sections of film can be performed to see if these particular combinations of variables or patterns are to be found in other situations. The context in which they are found can be examined as well as the context in which they are absent. This contextual information is important in defining and confirming the significance of these patterns.

This structured analysis will often involve using the standard techniques of photo analysis: counting, measuring, inventory, and comparison (Collier, 1967). Questions and concerns which are primarily descriptive in nature can be resolved by using these techniques right from the start, i.e., the question, "What is the variation of the seating

arrangement?" Using these techniques, more complex patterns and conclusions can be examined. However, tangible and identifying criteria must be agreed upon initially.

The purpose of this detailed analysis is both to define the criteria of analysis and to provide the details which make the conclusions believable. Occasionally, this detailed study will show that certain patterns and conclusions in earlier phases of analysis are no more than creative projections onto the film. Careful study of the film question, "What told me that?" is the key to responsible film analysis. However, there will be occasions for which we will not be able to answer the question by reference to specific details; yet, we remain certain that our interpretations of patterns and significance are correct. In these situations, it may be necessary to review the film in a more open fashion and look to see if the key to our perceptions lies in fluid interrelationships rather than in details. These relationships should be described as well as possible; they are just as valid as specifics of hand gestures and spacial adjustments.

It is probably wise to end any major analysis of the film with an overview of all the film in a relatively unstructured manner. In this way, the insights gained from the combination of different stages of analysis can be applied to the film as a whole and the general significance of the work can be defined as a totality rather than as a collection of details.

This general approach could be applied in a variety of ways. The film can be studied by the participants seen in the film, by those who made the film, by others in the community, by outsiders with their own particular perspectives, or by some team composed of all these individuals. One of the important features of film records is that they can be seen and discussed by many different people, each with his own perspective. This process can help qualify the particular biases and viewpoints of those who made and analyzed the film. In practice, it will not always be possible or necessary to follow through the procedures of analysis in the detail suggested here. The important process is the principle of movement from open-ended viewing to more structured analysis which includes answering the question, "What told me that?" and, with this analysis, move back again to the whole.

Film, Video or Stills?

This study was done with Super 8 film, and my discussion of methodology has centered around the use of film. While many of these comments would be equally applicable to gathering and analyzing data with a still camera or video equipment, it may be appropriate to comment on the characteristics of these different tools as they relate to applied visual research.

The still camera is an important tool for visual research, but because it lacks the glamour of film and video, it is seldom used. It is excellent for many documentary uses: surveys, mapping, inventory, proxemic studies, and in skilled hands, certain kinds of communication

studies. Its chief limitation is that it does not show motion or change in process. The result is that analysis of behavior and communication with still photographs requires a great deal of projection by the researcher as to what happens between images. This projection leaves much room for error. It is difficult to reliably read the quality and character of interactions from most still photographs. Despite these limitations, still cameras could be used far more than they are with a little imagination and effort. They are a general, low cost, durable and flexible means of recording, and they can be used in the most remote and demanding field situations.

Video has the potential for instant feedback, recycling tape, easy duplication, excellent sound, and in certain restricted situations, low cost. It has serious deficiencies as a tool for visual research analysis because of the relatively poor image quality. In practice, the equipment encourages one to restrict shooting to telephoto or close-up shots because the image quality in wide angle shots is so poor. As a result, contextual information is generally lacking in video records. This problem cannot be compensated for by deliberate wide shooting; such shots are generally unreadable due to poor resolution. The equipment is bulky, heavy, and fragile. It cannot be used extensively remote from sources of AC power and it does not handle climatic extremes well. For these reasons, it is a poor field tool. Finally, the capital investment for even the barest essential equipment is immense, particularly when allowance is made for future maintenance costs.

Video is best suited for situations in which its strengths are important and its weaknesses insignificant. Institutional settings in which the equipment is used heavily and tapes are recycled are an example of such a situation. It is particularly useful in situations where sound and rapid feedback are important and detailed analysis is not anticipated. It is an excellent tool for use in circumstances in which there is a high degree of participant involvement in the recording process. (R. Rundstrom: private communication.) From a research perspective, its most promising use might be in studies which are interested in verbal analysis supplemented by synchronized visual data. In such a situation, its limitations in visual recording would be less critical.

The alternative to video is Super 8 motion picture film. 16mm offers few research advantages over Super 8 and costs far more. The Super 8 image records both context and detail and is far superior to the video image for analysis purposes. Readily available equipment allows single frame, frame by frame, slow motion, high speed and normal speed viewing. This flexibility is quite valuable in analysis. The high contextual and detail content of properly shot Super 8 makes it an ideal means of visual research, and the image is much less exhausting to work with. It is probably the best tool for use in isolated field situations and in work which requires clear and permanent records for careful detailed analysis.

The basic equipment necessary for visual research with Super 8 costs much less than equivalent equipment for video and is much more compact and portable. With some planning and minor equipment alterations, shooting and certain types of viewing can be done for extended

periods of time in situations remote from an AC power source.

The major disadvantages of Super 8 are that film cannot be recycled, film must be processed before viewing, and the use of sync sound increases the costs considerably. A resourceful individual might solve the handicaps of the processing problem by doing his own, but this is more than most people can be expected to do. As a result, the film must be sent to a lab for processing which leads to considerable delay in remote locations. While excellent quality sync sound is possible with Super 8, the extended runs possible with video cannot be duplicated with film except at great cost. However, roughly synchronized audio tapes can be made for very little cost. Efficient use of Super 8 requires more selective shooting. This may require a more skilled observer behind the camera.

On a practical level, film and video should be seen as complementary, rather than as competing, mediums which lend themselves to different uses. On a personal level, I find video, with which I have worked extensively, to be very unsatisfying to shoot and frustrating to look at. There is a sensation that the technology is in control, independent of the dynamics of what is in front of the camera and my own desires as an observer/recorder. Other people love it.

Application of Methodology to a Hypothetical Situation

I have just described a very general procedure to gathering and analyzing data on cultural processes with a movie camera. How might this procedure be applied to a specific purpose--the further exploration of pace and flow, for example? How would the film or tape be shot? How would it be analyzed? How would the information or understandings obtained be made useful to others? A short discussion of a hypothetical situation might make the general procedures already presented more intelligible.

The site of this study is a cross-cultural school setting in a state of change from traditional Anglo-oriented curriculum, faculty, and goals to new goals, still uncertain, which it is hoped will be more appropriate to the children the school serves. The purpose of our hypothetical film study is to aid the school through this transition. Its specific aims are limited to an exploration of pace and flow in the school and the significance of these patterns with regard to some specific concerns of the school staff. Our discussions with them have told us that they are particularly worried about how the three cultural groups of students in the classes get along with each other, with the teachers, and how they respond to a new program of instruction that the school has started.

We want to know the answers to several questions: (1) How do the children get along with each other? (2) How do they interrelate with the different teachers and aides? (3) How do they respond to the new program (which is carried on half of each day) in comparison with the more conventional program which the school is continuing to provide? (4) Do the pace and flow patterns of the classes provide any answers to

these questions? The school has some video equipment left over from a defunct federally funded program. We decide to use that equipment later in the study but we start with Super 8, which is less bulky and intrusive than the video equipment. We buy some audio cassettes to get some roughly synchronized sound to go with the film.

Where are we going to aim our camera? What are we looking for? What classes and circumstances are we going to focus on? We don't know anything about the classes and the staff does not have a clear enough conception of what we are doing to guide us. We decide to use all our Super 8 on a general survey of every class that it is possible for us to film. Although we have the blessing of the school administration, we make a point of asking each teacher and aide if he or she is willing to be filmed. Two teachers and one aide (in different classes) would rather not be filmed, but the aide says it's all right to film the class as long as we take no pictures of him. We are secretly relieved since this leaves only six classes and we will not have to be quite as stingy with our shooting. We arrange to be in each class for a full day.

We have our questions and we know we will want to look for situations in the classes that might give us answers. We want a variety of shots of children interacting with each other or, on occasion, not interacting. We want shots of the teachers and aides with the children in groups and individually. We will devote a portion of our film to the reactions of the children to various aspects of the program, new and old. We will run our camera every time we see something we think might tell us something about our questions, and the general character of the program, within the limitations of the camera and the amount of film remaining for the day. We will also try to spread our shooting over the day because we know from past experience that different classes have different patterns at different times of the day. Something really important may come up in the last half hour. We make a point to record the beginning and ending of each period of the day.

When we have finished, we show the film back to the classes. This is mainly for the benefit of the children, as the teachers are too busy keeping track of the class to really look at the film. The aides are non-committal and the children are amused, especially when the film is shown in fast motion. However, the teachers miss having clear synchronized sound and a clear visual narrative thread. They have credentials and have been trained to be sensitive to verbal input that is organized and sequential. They are unprepared to handle the amorphous and somewhat chaotic images of uncut semi-silent film. As adults in a society with movies and television, they have expectations as to what "film" is supposed to look like. We begin to wish we had used video to start with.

We would like to go over each class with the aides and teachers but most of them are not yet interested. Those who are, are honestly too busy. We put this important process off to a time when we can be more coherent about what is in the film and how it might be useful. The film is logged and a preliminary open analysis is made. After several viewings of the film we think we see some interesting patterns. In particular, the response patterns of the students seem to suggest that the

aides are superior to the teachers in their communication with the students. We also note that the Anglo students, who are a minority in the classes, react negatively to instruction that is not presented in English. We record these patterns and the behavior which defines them for us; these notes will be used to develop questions and probes for further analysis. We know now that we will be looking with particular interest at the differences between aides and teachers.

Next, with our specific questions, we begin a more structured analysis which focuses on the film. We look at the children interacting. Who is interacting with whom? What is the nature of those interactions? Are they smooth, rough, extended, brief, frequent, infrequent? How fast are the children paced? Are there clear patterns of pace differences between groups of students? Is the pace consistent? Does pacing seem to affect interactions? The same questions are asked of the teachers and aides in their relationship with the children. We also look to see if there are patterns in the way they pace the school program. We look at student response to the new and old school curriculum and structures. Are there differences in responses? Do some children respond to one, others to the other? Which children respond to which? Do different teachers structure and pace the programs differently? How does it affect the children's responses? What did we see that provides us with the answers to these questions? What told us that?

We look with special interest at the aides. What do they do that is different? Is it their pace, their movements? Do they organize and structure their lesson differently? How do they use time? Where do they place children for lessons and how do they bring them into the lessons? What do they do about disciplinary problems? In what ways are they different from the teachers with regard to these issues?

Out of this process we arrive at some preliminary ideas as to some answers to the four main questions. After staring at the same section of film three days in a row, we are grateful that we did not use video. We also discover that we didn't see a lot when we were filming. We kept cutting the camera at the wrong time, failed to focus in on important events and left a lot of questions without data to provide answers. We also develop new questions which might help us answer our basic questions. We would like to go back and do some more shooting, but first we have to find out if we are on the right track. We cull out sections of film which have significant information, or about which we have questions. We take these down to the school and show this footage to some of the staff. We find we made some mistakes in analysis, usually from lack of specific information about the children and the program, which alter our interpretations of the film. The staff now has a somewhat clearer idea of what can come out of the film,but they want public relations footage to show to visitors and parents: that is, a tangible product with a purpose. We suggest that a video tape would be better since they can put a narration on it,and it will have better synchronization of sound. It is agreed that some of the classes will be video taped with the dual purpose of providing something they can show to the public and also providing material for further exploration of our original questions.

This time, our shooting procedure changes somewhat. We are familiar

with the basic program of the school and have some idea of the patterns of non-verbal behavior that can be found. The preliminary analysis has suggested that the children in Class Two are more harmonious and comfortable in their relationships with each other and with the teacher than the other classes. There also seems to be some connection between the teacher's manner of presenting lessons in the new curriculum to the children and the children's interaction with each other. We decide to concentrate our taping on Class Two and Class Five (which seems to be distinctly different from Class Two). We also decide to tape the initial presentation of lessons in several other classes. We make some video tapes to meet the needs of the school's request for something to show the public. Since we are shooting video tape, our shooting patterns have changed somewhat. Our runs are longer and we are more likely to make more camera cuts in accordance with verbal breaks. There is less in-the-camera editing. This will mean more work in analysis later.

When this session of recording is complete, we dub off a program for the school's use after showing the tapes back to the staff and asking them what they want in the tape. We then make a quick log of the tapes and another quick analysis. The earlier, tentative conclusions are altered somewhat, but what is especially clear is that we will have to get the teachers and aides more involved in the interpretation of the visual record. We manage to interest several persons to sit down with us and look at sections of the tape with some of the questions we have been using as probes. We ask them for their answers. More importantly, we ask for what things they saw that gave them those answers. The discussions lead to more taping, this time with more guidance from the staff and further viewing, discussion and analysis. At some point, it becomes possible to make some fairly definite answers to the questions that started the study. The study is complete.

This hypothetical study is, of course, both idealized and imperfect. There are other ways it could have been carried out. It might have been possible to have the aides or teachers do some of the taping. Teachers could have made deliberate shifts in their classroom program to see if, related to these questions, behavioral changes might result. The variations are endless.

The methods or procedures that have been described in this section of the study are not recipes for extracting data on non-verbal communication, but rather an approach to data gathering and analysis. Variations on these suggestions and different procedures are possible and useful, particularly those procedures which involve increased, or even complete, control of the process by the participants in the cultural processes that are being investigated. One serious limitation of the analysis of film in this text is the total lack of input from either the teachers or the communities involved, a participation that would be absolutely necessary for a true understanding of the dynamics of the circumstances which were the focus of this study.

PART FOUR

CONCLUSION

This study has looked at pace and flow as part of the communication process in cross-cultural situations. The importance of non-verbal aspects in interactions appear to be related largely to their role in defining the context of the communication. An interrelationship of content, often referred to as "information," and context produces the meaning of a communication. The nature of this interrelationship appears to vary from culture to culture. Some cultures place more emphasis on the contextual aspects of the interaction and some emphasize the information, or content, aspects of the process. Non-verbal behavior and systems tend to be contextual in function while verbal forms, particularly written words, tend to be more informational in character. Most Americans, particularly in the academic community, have been trained to emphasize content and information while deemphasizing or disregarding context (Hall 1974: 18-21). We are correspondingly insensitive to many non-verbal signals and phenomena, and we often experience difficulties when interacting with people who place different emphasis and meanings on matters of context. This situation helps to explain the relative neglect of non-verbal aspects of interactions in communication studies and the heavy emphasis on linguistics. From our content-dominated concept of communication, many non-verbal aspects of interactions are not communication at all because they transmit no information.

Pace and flow are important in the communication process because they are part of the immediate context. Their contexting function takes a number of forms; and, they have an equally important function of organizing and facilitating the general process of communication.

Pace was originally described in this study as the speed at which people move and do things, as well as the manner in which they use time and organized processes in time. Most of my discussion of pace in the analysis of the Alaskan footage was restricted to the rate at which people moved and did things on a short-term basis.

Pace patterns vary from culture to culture and are quite stable for any given circumstance within a culture. This stability, which was an obvious characteristic of pace patterns in this film analysis, is a key to one of the functions of pace in communications. It provides a temporal framework within which to structure interactions; it also provides a pattern of speed of movement to guide people's actions which do not have to be improvised anew for each interaction. This not only provides guidelines for behavior, but also helps to define the significance or meaning of the interaction. If we make a social call on someone we know, there is an appropriate time for the visit as well as an appropriate rate and style of behavior and movements. If we extend the visit beyond the appropriate time, it changes the nature of the visit,

and our host is likely to begin to wonder what we came for. Obviously, it is for more than a "social" visit and we must then make appropriate actions to explain ourselves or risk being considered impolite. Likewise, if we move too quickly or slowly during this visit, it may be taken to mean that something is wrong and may also make the process of communication difficult. This last aspect of pace, as a facilitator of communication, is related to flow and has the function of providing an agreed-upon rate of movement which makes interactions smooth and helps reduce or eliminate any sensation of friction or lack of communication. Without some pattern of shared pace, other aspects of flow are almost impossible. This film study was filled with examples of difficulties related to this aspect of pace.

Generally, pace sets the timetable and rate for other parts of the communication process. When timetables are not shared, the parties involved have a hard time getting together and communication suffers. In certain circumstances, changes in the timetable or conflicting interpretations of its significance may lead to serious misunderstandings about what is being communicated (Hall 1967: 18).

Flow, which I have described as the interrelating of movements in interactions between or among people, is equally important. Many of the aspects of pace which make it important in communications are important because they affect the nature of flow.

Flow has several main functions. When people meet, the subtleties of the interrelationship of their movements serve as clues to the nature of the relationship and the possibility of communication. Rapid and comfortable adjustment of movements, so that they become interrelated in a smooth fashion, creates a context favorable to communication on various levels, as well as implicitly stating, "We share some things in common and should be able to comprehend each other." As an interaction continues, the pattern of flow that develops reflects and reinforces the course of the interaction. If things are going well, the motions of the participants become smooth and well synchronized, having little friction or oppositional movements and serving to reinforce the process and make it easier. There is the implicit message of, "We are in tune." If things go badly, with misunderstandings, missed cues and general discomfort, the resulting friction of movement caused by lack of synchronization reflects and reinforces the negative aspects of the situation. The contrast between Head Start and prefirst in the film study reflected these contrasting patterns of flow and results. Subtleties of conflicts of pace and flow are often detected before difficulties on other levels have a real chance to develop on their own. There are times when differences on this non-verbal level predestine communications on other levels to failure. This is particularly true in cross-cultural circumstances where participants expect to encounter difficulties. While verbal misunderstandings and confusion take a while to develop, non-verbal signals are highly contextual and are transmitted very rapidly (Hall 1974: 18). Non-verbal signals predispose participants to difficulties on the verbal level almost before they begin. These non-verbal signals are, of course, not limited to matters of pace and flow but also include other proxemic and kinesic factors.

These functions of pace and flow were probably in operation in the situations filmed in Alaska. As discussed in the concluding section of the analysis, the two Head Start teachers were known by the children from having shared prior experiences, similar interests, or family ties. The fact that they operated at the same pace, moved the same way, and were able to integrate their movements with those of the children and the children with theirs, served to reinforce constantly the positive apsects of the relationship and to make communication in the classroom easier. Everyone expected smooth communication, and all the behavior in individual or specific interactions served to confirm the expectation. With the Anglo teachers, the reverse was generally the case. The sharp differences in pace and movements with the resulting lack of flow served to confirm their distance from the Native children and adults and the difficulty of communicating with them. Extreme cases of lack of flow, for example, the dancing sequence in the kindergarten class or the alphabet sequence in the same room, are probably so disruptive to the communication process that the verbal messages are practically unheard, let alone understood. The teachers who made some adjustments in pace, movements or structuring of processes, and developed some degree of smooth flow with the children received considerably higher verbal comprehension from the children.

People must have some sharing of patterns in three areas of non-verbal communication in order for smooth flow to develop. These are pace, proxemics and movement style (part of kinesics). Pace and its role in flow have already been discussed, and the function of the other two are relatively obvious. Even if people are moving at the same pace, if one has linear, angular movements, it is going to be difficult for flow to develop if the other's movements tend to be circular or rounded. Mr. Principal is an example of a person whose kinesic patterns as well as his pace made interaction with the children in his class difficult.

Proxemic considerations are important in any interaction. A smooth flow of movements is possible only when proxemic expectations have been met. Factors of what kinds of movements are "proper" in a given proxemic relationship limit the movements and responses that are possible. In the film study it was noted that the Eskimo aides and teachers operated much closer to the children than most of the non-Native teachers. Close distance was also characteristic of many interactions in village and home scenes as well as in the cases where Anglo teachers developed smoother and more intense communications with the children. It is possible that most of the Anglo teachers operated much of the time at what the children considered impersonal distance requiring little response or interaction. All these factors combined made developing good communication almost impossible in many of the classes. The Anglo teachers who did well had all made alterations or adjustments which served to minimize differences in at least one of the three areas.

It would seem that pace and flow are, together with other aspects of non-verbal communication, important factors which can alter the course and perhaps the meaning of interactions. What are some of the implications of such a conclusion?

In the past it was common for fieldworkers to go through a ritual-

istic process of attempting to learn something of the language of the people they were studying. This ritual had ideological as well as practical justifications. Then and now, a standard tenent of anthropology was that at least a minimal knowledge of a people's language was necessary in order to have a proper comprehension of their culture. This belief, no doubt valid, reflected also a heavy emphasis in anthropological thought on the role of verbal communication, language, in culture which reached a sort of zenith with the theoretical work done and inspired by Sapir and Whorf. This theoretical view of the world may be paraphrased as: "We are what we speak"; "We think the way we talk"; and "The world is the way we name it." This emphasis on language reflected anthropological awareness that communication was critical to cultural processes, but it also reflected the verbal, content-oriented conception of communication common in the modern academic world.

Studies in non-verbal systems of culture suggest that some modification in this emphasis may be appropriate. Even language's role in cognition, or reasoning, is somewhat in question since recent investigations suggest that reasoning does not necessarily require the use of words or symbols (Hall 1974: 20). It seems that communication, cognition, perception and other aspects of culture which serve to shape our conception of events and our place in them are more complex and multidimensional than they are generally conceived to be. There is a general lack in anthropology of awareness of non-verbal and contextual matters. This partially explains why many anthropological studies, dependent as they are on verbal information and presented in verbal form (written), seem to people from the cultures they describe either to be shallow or to be about someplace else; contextual factors tend to be left out or missed in the first place.

Since many contextual matters are perceived or interpreted non-verbally, they may be processed by a different portion of the brain than verbal inputs (Hall 1974: 18-20). It is problematical whether or not they can be reduced to verbal or written forms. Maybe there is cultural knowledge or experience which cannot be comprehended or transmitted cross-culturally because it is linked to contextual relationships that cannot be duplicated or transmitted in verbal form.

The implications for anthropology are that changes may have to be made in the education and training of anthropologists as well as in the practice of the profession in the field. Perhaps many aspects of culture cannot be reduced to verbal abstractions except at a cost in depth and significance (Hall 1974: 18; R. Rundstrom: private communication). Such a realization would require a major overhaul in the teaching of anthropology since few institutions offer courses in non-verbal aspects of culture let alone incorporate that knowledge into their regular course offerings.

Few general texts in anthropology devote any time to non-verbal communication and other aspects of people's use of space and time. Yet these are the very texts which present the basic knowledge and viewpoints of anthropology to beginning students and to people who will never explore further in the field.

If such non-verbal information cannot be reduced to verbal forms, there would have to be changes in storing and transmitting such knowledge with less emphasis on verbal or written forms. The increased interest in ethnographic film reflects a trend in this direction, but as yet most of these tend to be pictorial representations of information already reduced to verbal forms rather than something that cannot be conveyed in any other way.

Corresponding changes would have to be made in fieldwork methods. These are the implications of the study of non-verbal aspects of cultures in general. This study concerned itself with only a few aspects of non-verbal communication. Since it appears that pace and flow, like proxemic systems, are quite stable patterns which people may not think about a great deal, it is important that a fieldworker or any person working in a cross-cultural circumstance be sensitized to the existence of differences of this kind. This might make it easier for them to comprehend some of their own frustrations in communications as well as enable them to take steps to mitigate some of the inevitable conflicts. This would require that they be able to observe other people's pace and flow styles to some degree and see how they are different from their own. They must learn to see, to be aware. The importance of trying to make accommodations on the level of pace and flow is that the primary function of pacing seems to be to facilitate interactions. The sooner a person can make the interaction comfortable, the easier it will be to develop communication on all levels, including the interchange of verbal information.

This raises the question of the degree to which non-verbal systems, like pace and flow, can be taught. There is not much information or knowledge regarding this issue at the present time. Possibly some things can be taught or be learned by an outsider and others cannot. Contextual systems take a long time to acquire. It may be that some cannot be learned except by being a lifetime member of a culture (Hall 1974: 18). My own experience in this field makes me certain that there are contextual aspects of situations which change the meaning of events which cannot be explained in verbal or written form.

If a person's activities extend beyond observation and involve teaching, direction of projects, or other applied work, other aspects of pace and flow also become important. An outsider needs to learn the rate at which things are "supposed" to get done and the relative pacing and importance of different stages of processes. In this fashion, one can avoid spending time on aspects of processes considered insignificant locally as well as ensure the smooth transfer of information and implementation of the process as a whole. In schools this might mean complete changes in the scheduling of lessons, as well as the direct presentation of materials. Above all, it would require active, but necessarily subtle, structuring of interrelationships so that people of the culture can themselves set the pace and flow patterns of a situation. Finally, an outsider must realize that s/he is never going to have the potential for communications that someone in the group has and that therefore, s/he should emphasize those activities or functions for which they have special qualifications, rather than duplicate activities that could much better be carried out by local people. Indeed, in applied

situations like education, more awareness of non-verbal and contextual aspects of cultural processes are most important since the results of misunderstandings and poor communications have impact on many more people than is the case in ordinary anthropological research.

An increased understanding of non-verbal aspects of communication is important, then, not only for more complete understanding of the function of culture by anthropologists but also for the benefit of all people who operate in cross-cultural circumstances, for whom most anthropological concepts would be intellectual curiosities. However, anthropology has a way to go before it will have either the knowledge or the means of presenting it that would be useful to such people.

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